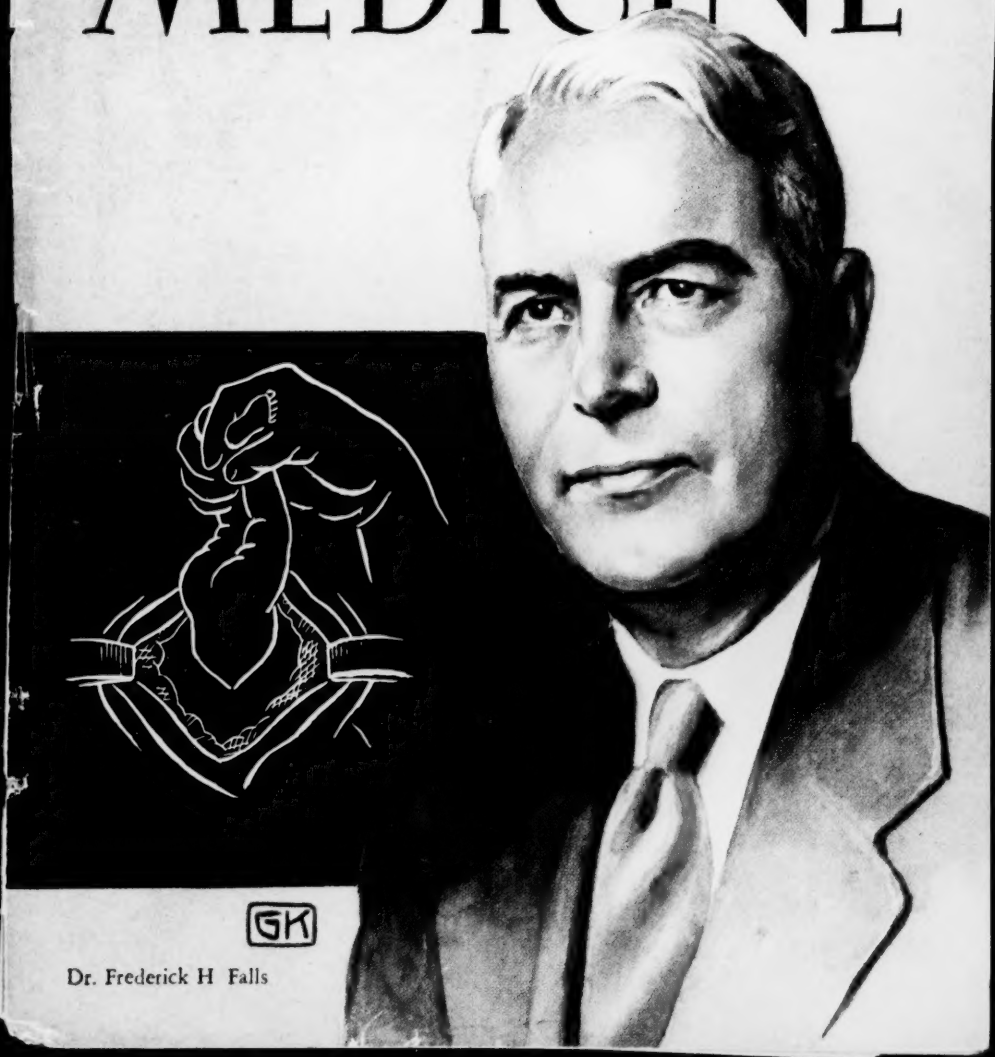
SEPTEMBER 15, 1953

MODERN MEDICINE

The Journal of Diagnosis and Treatment



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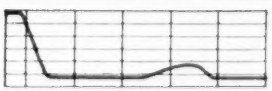

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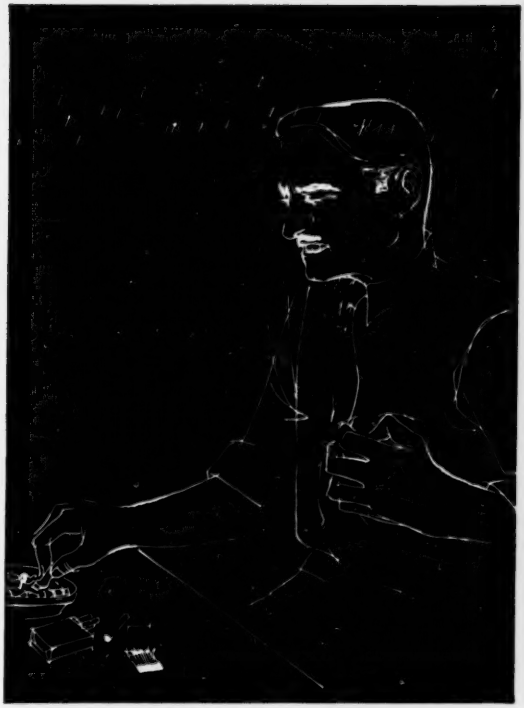

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Bibliography: 1. *Humphreys, P., et al.: Angiology 3:1 (Feb.) 1952.* 2. *Plotz, M.: New York State J. Med. 52:2012 (Aug. 15) 1952.* 3. *Dalben-Geoffroy, P.: L'Ouest-Médical, vol. 3 (July) 1950.*

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1. Lobitz, W. C., Jr., and Jillson, O. F.: Postgrad. Med. 12:2, 1952.
2. Goodman, H.: J.A.M.A. 129:707, 1945.
3. Underwood, G. B., et al.: J.A.M.A. 130:240, 1946.
4. Lubowe, I. I.: New York State J. Med. 50:1743, 1950.
5. Nomland, R.: Postgrad. Med. 11:412, 1952.

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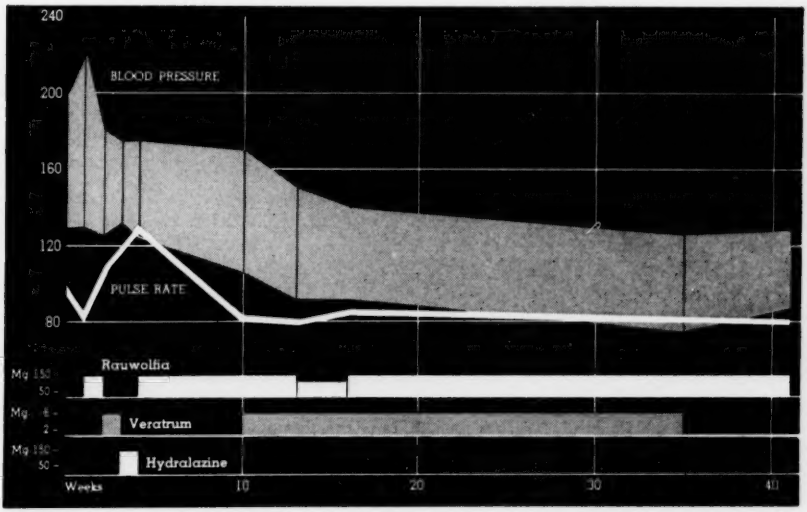

This patient's blood pressure was lowered about the same amount by rauwolfia, veratrum or hydralazine. Hydralazine, however, caused undesirable reactions and increased the pulse rate. Veratrum augmented the effect of rauwolfia, and the effect was maintained even when veratrum was discontinued some months later. – After R. W. Wilkins, Ann. Int. Med. 37: 1144, 1952.

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for

September 15

1953

Modern Medicine

Vol. 21, No. 18

THE MAN ON THE COVER is Dr. Frederick H. Falls of Chicago, Professor of Obstetrics and Gynecology and head of the department, University of Illinois College of Medicine. He is also Professor of Gynecology in the Cook County graduate school and heads the gynecology department at Cook County Hospital. He is president of the American Committee on Maternal Welfare and associate editor of *The Cyclopedia of Medicine, Surgery and Specialties*. The textbook, *Obstetric Nursing*, was written by him. Recently Dr. Falls has been engrossed with visual education technics. A review of his article, "Comparison of Cesarean Sections," appears on page 101.

Contents for September 15 1953

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(Continued on page 16)

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A small amount is rubbed gently into the involved area one to three times a day until definite evidence of improvement is observed. The frequency of application may then be reduced to once a day or less, depending upon the results obtained.

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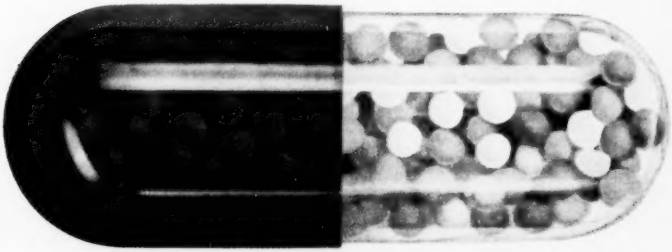

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LETTER FROM THE EDITORS

Dear Reader:

Artists find that some of the most charming effects they achieve are accidental. Similarly, editors sometimes hit the bull's-eye with a piece that, like Topsy, "just growed."

The problem discussed on page 36 in the Forensic Medicine department of this issue is an example. It started with a reader's question on the technic of vasectomy answered in our February 15, 1953 issue. This item inspired a letter from one of our National Editorial Board members questioning the advisability, from a medicolegal standpoint, of doing a vasectomy at all.

Other readers were bothered by the same question. The matter was referred to Mr. Street, who conducts the Forensic Medicine department. He could find no ruling directly on the points raised, but he did make a thorough search and came up with several citations that might bear upon the question of sterilization procedures and abortion. His discussion was so interesting that we decided to devote the whole Forensic Medicine section in this issue to it. You will find it worth reading.

Mr. Street is one of two nonmedical persons regularly contributing to *Modern Medicine*. The other is our Washington correspondent. Both have long been devoted to the areas in which their vocations and medicine overlap. We would be the poorer without them.

The Editors

Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Not Enough Emphasis

TO THE EDITORS: I was naturally pleased that my recent article, "Subtotal Gastric Resection for Peptic Ulcer," was considered of sufficient interest to be published in brief form in *Modern Medicine* (July 1, 1953, p. 84).

I am greatly disappointed, however, that the review did not emphasize the main point, namely, that an adequate removal of the acid-secreting area can be more effectively done by removing a larger part of the greater curvature where most of the acid pepsin cells lie, instead of removing the lesser curvature as is more frequently done.

GUNTHER W. NAGEL, M.D.
San Francisco

Sends Cash for Foundation

TO THE EDITORS: I agree with the good M.D. from Indiana who suggested that every recipient of *Modern Medicine* contribute $10 to be used in equal proportions as a donation for the establishment of the Modern Medicine Foundation for Education and Research and for the expenses of publishing the Modern Medicine Annual *(Modern Medicine,* July 15, 1953, p. 20).

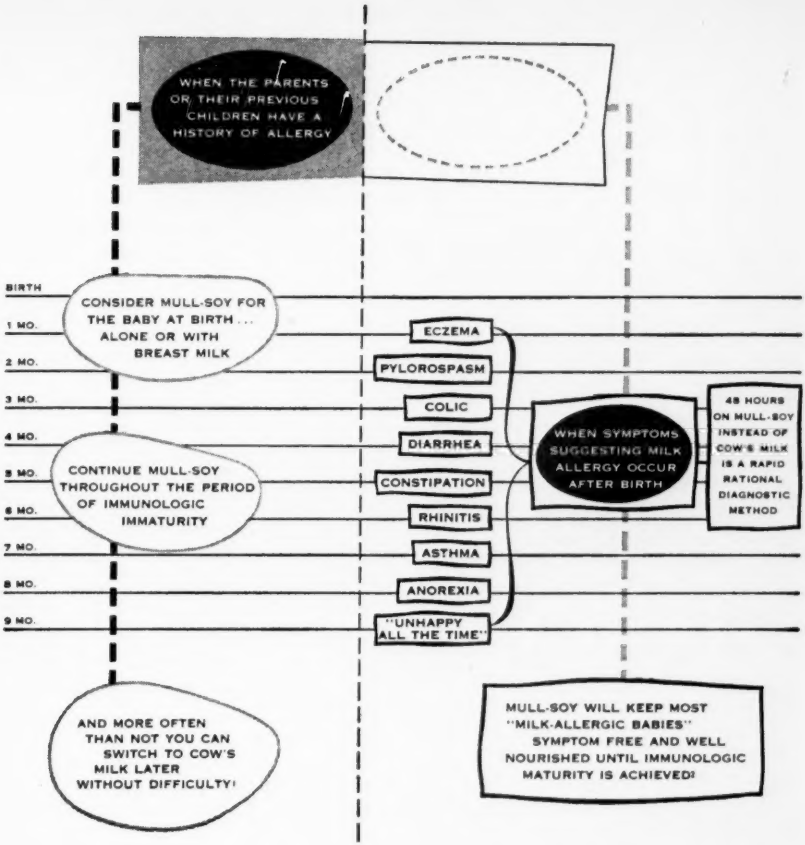
The journal which we receive gratis is actually a dictionary to every physician in every line of practice. We receive so much for nothing that we are put to shame. We learn from the wonderfully condensed papers and even from the advertisements. For the assurance that your magazine will be forthcoming in the years to come, I want to be among the first on record to contribute the $10, which I hereby enclose. I hope there will be enough donations to accomplish the above noble purpose.

S. M. SIMON, M.D.
Cleveland

Books for Israel

TO THE EDITORS: I am writing you in the hope that many of your readers may be able to spare a few textbooks from their libraries.

Medical, scientific, and technical books are desperately needed in Israel. Unfortunately, inability to obtain dollar exchange has handicapped the acquisition of needed books through ordinary channels. Therefore, under sponsorship of the U. S. State Department, a cooperative project has been set up to solicit gifts of used books for Israeli institutions.



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1. Glaser, J., and Johnstone, D. E.: Ann. Allergy 10:433, 1952.
2. Clein, N. W.: Ann. Allergy 9:195, 1951.

Many individuals, libraries, and publishers may have books published since 1940 that have been superseded by newer editions. If the older volumes can be spared, they would be well used for the advancement of medical science in Israel. Such gifts of knowledge would be valued far beyond the monetary worth of the books.

Thanks for any assistance you can give.

NATHAN WEINER, PH.D.
Richmond Hill, N. Y.

¶ Books should be sent prepaid parcel post to: Books for Israel, 115 King St., New York 1, N. Y.

Syringe Sterilization

TO THE EDITORS: The reply in your Questions and Answers column concerning the best method for sterilizing glass syringes is, in my opinion, pathetically antiquated (*Modern Medicine*, June 1, 1953, p. 33).

If syringes are flushed with any of the modern household detergents, rinsed first with tap water then with distilled water, they may be assembled and boiled in a sterilizer. If the sterilizer contains only distilled water, as every sterilizer should, there will never be any scale on the syringes and they cannot stick or jam. They will remain as bright as the day they came from the factory.

If dry sterilization is desired, again the syringes should be assembled before sterilization, provided they are washed and rinsed as above.

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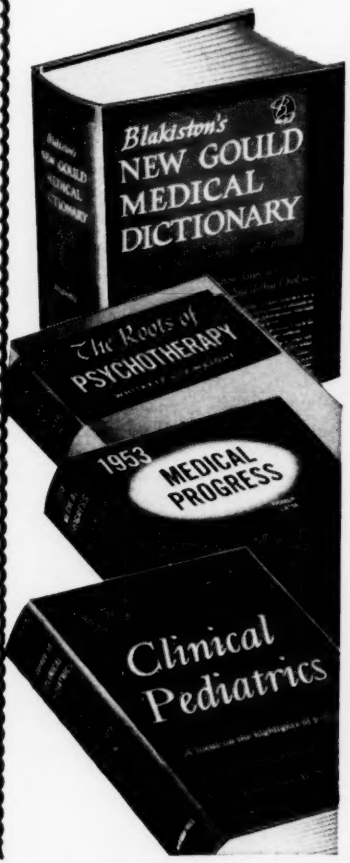

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Ball Valve Thrombus

TO THE EDITORS: In Diagnostix Case MM-239 *(Modern Medicine,* May 15, 1953, p. 186), the 31-year-old housewife was admitted because of severe dyspnea, cyanosis, and syncope. The syncopal attack lasted only a few minutes. The cyanosis involved only the fingernails and was not constantly present. She was perfectly comfortable while lying flat, yet the slight effort of sitting up made her short of breath.

The Visiting M. D. made no attempt to explain this phenomenon. One should consider the possibility, though rare, of a pedunculated or ball valve thrombus in the left auricle, which on this occasion may have occluded the mitral valve and produced the striking attack of dyspnea, cyanosis, and syncope.

Again, upon reexamination, the slight effort of sitting up in bed made her short of breath. One can visualize partial occlusion of the auricu'oventricular orifice occurring on change of posture from the horizontal to the erect.

JOSEPH G. WEINER, M.D.
Philadelphia

¶ The author of Diagnostix Case MM-239 was sent Dr. Weiner's query. The following letter was the result.—Ed.

► TO THE EDITORS: The diagnostic possibility raised by Dr. Joseph G. Weiner is a good one for consideration but could hardly explain all the findings in this Diagnostix case. Descriptions of patients with a ball valve thrombus of the left auricle do not give me the impression that chronic symptoms of this patient would be explainable on that basis.

The symptoms described in this

(Continued on page 29)

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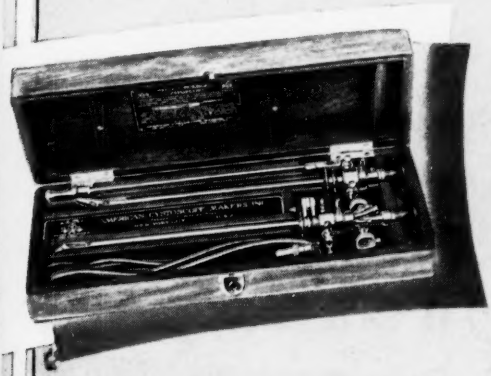

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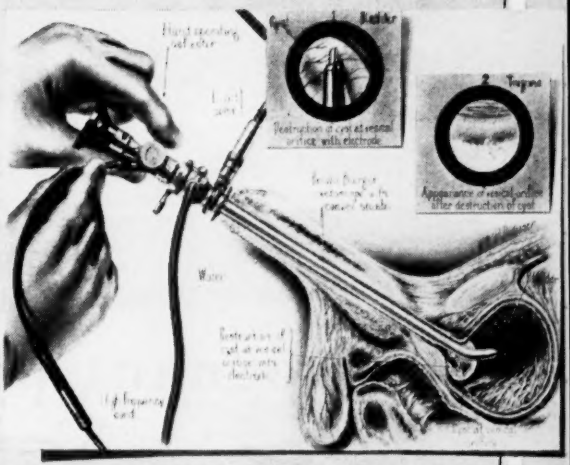

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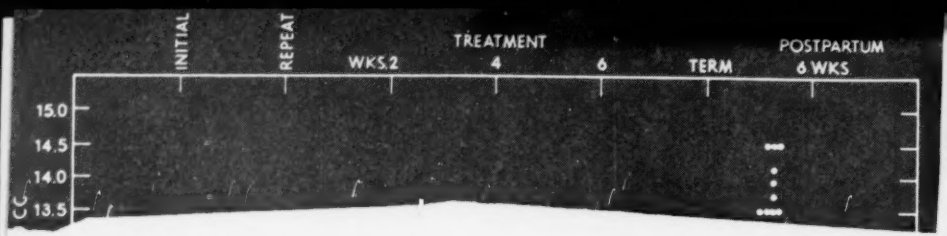
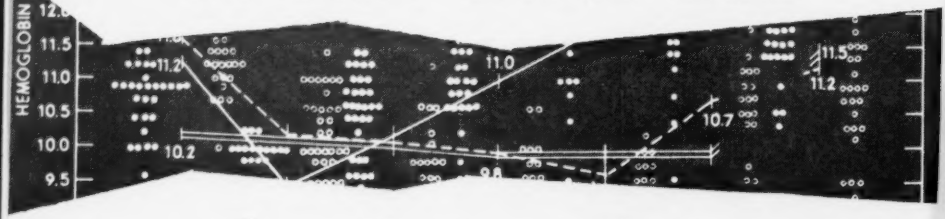
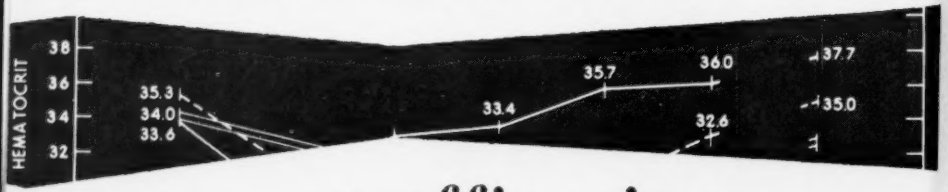


"We have never had



other iron salts



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*Dieckmann, W. J., and Priddle, H. D.: Anemia of Pregnancy Treated with Molybdenum-Iron Complex, Am. J. Obstet. & Gynec. 57:541-546 (Mar.) 1949.

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Pantothenic Acid (as calcium pantothenate)	10 mg.
Liver Fraction 2, N.F.	0.3 Gm. (5 grs.)
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case are fairly typical of primary pulmonary hypertension. The patient's dyspnea on sitting up and comfort when flat were described to emphasize the lack of orthopnea —no congestive failure of left heart—and also to illustrate the ease with which slight exertion may cause dyspnea with the disease under discussion.

So, in summary, I believe that a ball valve thrombus might explain the acute symptoms in the Clue but would not by itself be compatible with the more persistent findings, especially those demonstrated by the electrocardiogram and cardiac catheterization.

Would Repeat Trauma Issue

TO THE EDITORS: About a year ago, *Modern Medicine* devoted an issue to trauma (Sept. 1, 1952, p. 65). I thought this issue would be a good guide to injuries that I do not see often enough to remember well. Someone else must have thought the same, because I cannot find my copy.

Trauma is a phase of surgical treatment that the general surgeon is exposed to in spurts. Sometimes, long intervals elapse between similar types of injuries.

I would be in favor of receiving, each year, one issue of *Modern Medicine* devoted to this subject. If the approach was not changed, a verbatim reuse of the previous issue or articles would suit me fine. Then trauma in related subspecialties might be better remembered.

MICHAEL E. CONNELLY, M.D.
Rochester, Minn.

A few copies of the Trauma Symposium are available for other readers who may have misplaced their copies.—Ed.

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*Hermann, I. F., and Smith, R. T.: JL.-Lancet 71:271 (July), 1951.

Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

QUESTION: What is recommended for a patient with severe emphysema of the lung and fracture of a lower lumbar vertebra?

M.D., Michigan

ANSWER: *By Consultant in Orthopedics.* If the patient will stand hyperextension, either a cast or some form of brace can be used. The brace would seem preferable for this individual because removal could be quickly accomplished in case of emergency. Many patients tolerate a degree of permanent compression without serious disability.

QUESTION: What is the cause and what treatment can you suggest for foul breath odors in adolescents?

M.D., Illinois

ANSWER: *By Consultant in Otolaryngology.* Foul breath odors in the adolescent age group are usually found in one or more of the following conditions: [1] chronic tonsillitis involving the faucial or lingual tonsils or infected lymphoid tissue in the nasopharynx, a condition enhanced by mouth breathing, [2] dental sepsis, [3] atrophic rhinitis or saprophytic involvement of any of the nasal accessory sinuses, and [4] some condition in the esophagus or gastrointestinal system associated with abnormal fermentation.

Sometimes the latter condition is improved by changing the bacterial flora of the intestinal content. Occasionally relief is obtained temporarily by ingestion of charcoal.

QUESTION: What medical method will prevent an erection from occurring at any time in a 61-year-old patient? What simple surgical procedure can be used to prevent an erection permanently?

M.D., New Jersey

ANSWER: *By Consultant in Urology.* No sure medical method of preventing an erection is known. Older men often have erections by a reflex mechanism when the bladder fills at night, and probably the only means of prevention is removal of the prostate when indicated.

Estrogens may be worth while. However, any resultant hypertrophy of the breasts may annoy the patient more than the original condition. A suggested trial dose is 5 mg. of stilbestrol at bedtime. If the desired effect occurs in a few weeks, the amount may be reduced gradually until a minimum effective dose is found.

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Portis, S. A., and King, J. C.: J.A.M.A. *148*:1073 (Mar. 29) 1952.

"Dehydrocholic acid may be used, 3 to 5 grains (0.20 to 0.30 gm.) three times a day."

Portis, S. A., and Weinberg, S.: J.A.M.A. *149*:1265 (Aug. 2) 1952.

COMBATS COLONIC DEHYDRATION

"Deficiency of whole bile or bile salts leads to constipation by interference with the water balance of the colon."

Lichtman, S. S.: Diseases of the Liver, Gallbladder and Bile Ducts, ed. 2, Philadelphia, Lea & Febiger, 1949, p. 184.

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". . . the volume output of a bile of relatively high water content and low viscosity. . . ."

Beckman, H.: Pharmacology in Clinical Practice, Philadelphia, W. B. Saunders Company, 1952, p. 361.

HAS NATURAL STIMULATING EFFECT

". . . bile per se is stimulating to the movements of the bowel so that an increase in bile flow has a natural stimulating effect."

Shallenberger, P. L., and Kerr, P. B.: Postgrad. Med. *13*:32, 1953.

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Forensic Medicine

ARTHUR L. H. STREET, LL.B.

Prepared especially for Modern Medicine

PROBLEM. Is vasectomy or salpingectomy for other than therapeutic reasons illegal even though the married couple consent to the operation?

ANSWER: Apparently, there is no statute in any state and no authoritative judicial decision that either distinctly sanctions or discountenances a damage suit against a surgeon for performing such an operation.

Because groundless suits may be brought, though not maintained, a prudent doctor should carefully weigh prevailing professional opinions as to the propriety of performing such operations before risking suit as well as liability. He should secure a carefully considered opinion of local legal counsel based upon such pertinent local statutes and court decisions as may exist. An unreported decision of a trial court might possibly influence a decision by the court of last resort in the state.

Analogies may concern the right to sue for illegal abortion when the patient has consented, involving consideration of the grounds upon which such abortion is prohibited and of differing judicial notions as to whether a consenting party can maintain a civil suit.

Also pertinent is the distinction usually drawn between impotency and sterility as ground for divorce or marriage annulment.

An opinion of the Pennsylvania Superior Court in 1937 states that sterility, as distinguished from impotence, has never been regarded in this country as ground for divorce or marriage annulment in the absence of fraudulent concealment (191 Atl. 666). Sexual potency, not the ability to procreate, is the vital factor. If a spouse cannot terminate the marital relation because of sterility, why should either have a right to sue for damages for a vasectomy or salpingectomy to which both assented, especially when no prohibitory statute or malpractice exists and potency is preserved?

An appellate court in Tennessee decided that a statute authorizing divorce for impotency and inability to procreate did not authorize divorce for sterility not involving impotency (1 Tenn. Civ. App. 538).

The court decision having the strongest bearing on the problem is that rendered by the Minnesota Supreme Court in 1934 (192 Minn. 123, 255 N. W. 620, 93 A. L. R. 570). In this case it was decided that a doctor's contract to perform a vasectomy because the patient's wife could not safely endure a second childbirth was not invalid.

(Continued on page 40)

How

CARBONATED BEVERAGES

act in the relief of "Heartburn"

When patients complain of "heartburn" are they aware that their difficulty is not alone the regurgitation of acid material which gives rise to the burning sensation? Are they aware that this symptom would not be manifest were it not for a nervous disturbance of the esophageal sphincter which flutters open sporadically?

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Use of carbonated beverages by the patient, under the physician's direction, for relief from "heartburn," is not merely symptomatic treatment, but tends to correct the underlying physiologic disturbance.

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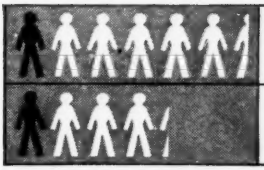

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†Sherber, D. A., and Levites, M. M.: Hypercholesteremia. Effect on Cholesterol Metabolism of a Polysorbate 80-Choline-Inositol Complex (MONICHOL) J.A.M.A. 152:682 (June 20) 1953.

*Trademark

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The husband sued the surgeon for alleged deceit in misleading him to believe that the vasectomy was successful. Damages were sought because of the wife's subsequent pregnancy and childbirth, which occasioned the husband expense and anxiety, though the wife survived.

This suit was dismissed on the ground that the complaint did not show that the doctor had acted fraudulently.

The Supreme Court rejected the doctor's contention that the suit was dismissible on the independent ground that the contract for the vasectomy was illegal. The court reasoned that no question of public policy as applied to sterilization was involved. Medical necessity existed, and it was simpler and less hazardous to perfrom a vasectomy than a salpingectomy. However, because the question whether voluntary sterilization without medical necessity is against public policy, especially when not prohibited by statute, was not presented to the court or passed upon by it, the opinion clearly does not require an affirmative answer.

The Minnesota court's opinion is to be compared with a damage suit which was brought in 1948 for death of an unmarried woman through illegal abortion (227 Minn. 154, 34 N. W. 2d 700).

It was decided that legal action was permissible on a theory of the woman's assent to the operation, because the consent was involuntary. To bar recovery "it must be shown that submission to the abortion was voluntary." Here the court seems to agree with the tribunals in some other states which make

(Continued on page 45)

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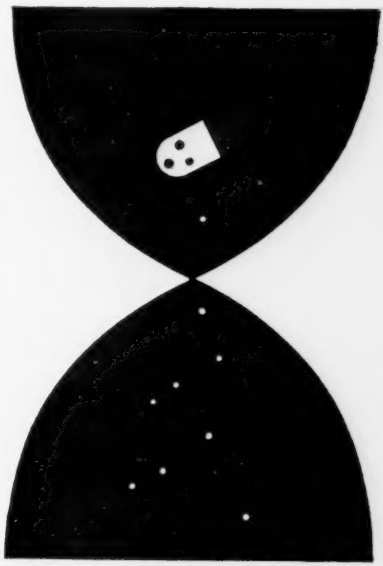

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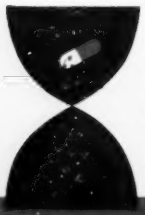
'Spansule' 'Spansule' 'Spansule' 'Spansule' 'Spansule' 'Spansule'

One 'Spansule' capsule provides 10 to 12 hours of uniform therapeutic effect.



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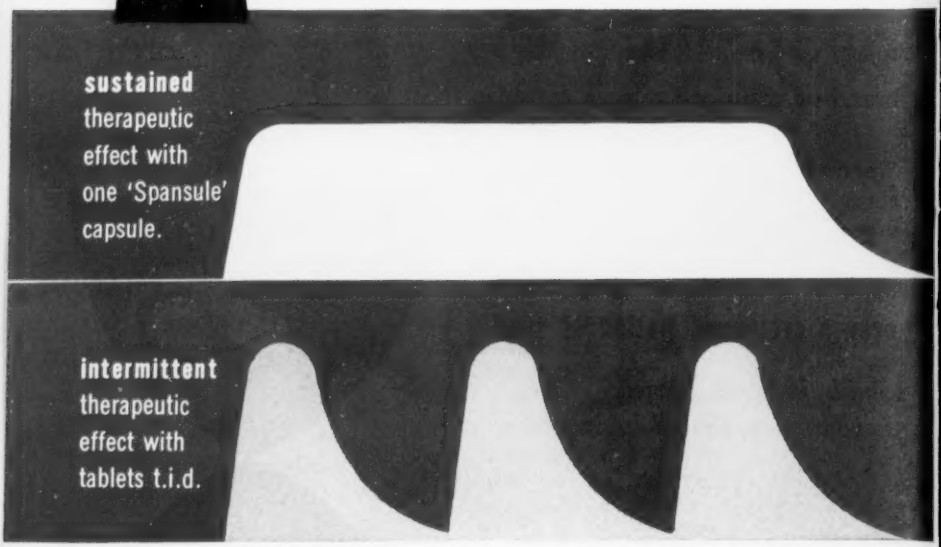

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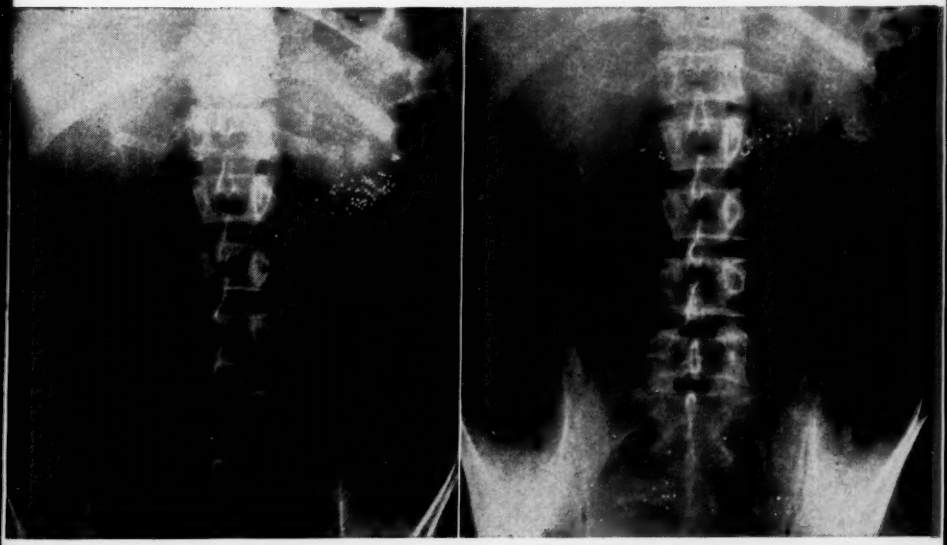
The prolonged, uniform release of medication provided by 'Spansule' capsules is now available for the management of depression and for the control of appetite in weight reduction. Smith, Kline & French Laboratories are constantly adapting the 'Spansule' capsule to ever-widening areas of therapeutic use.

X-ray plates demonstrate:
sustained, uniform release of medication with Spansule* sustained release capsules.

These X-rays show how one 'Spansule' capsule disintegrated through a nine-hour period in a typical subject. The pellets used in this study were specially treated with a radiopaque substance that would not affect their disintegration rate. They have been slightly enlarged and brightened for reproduction in this journal. Their number and position are, of course, unchanged.



8 a.m.
15 minutes after ingestion of one 'Spansule' capsule. The 76 pellets are entirely within the stomach.

11 a.m.
3¼ hours after ingestion of one 'Spansule' capsule. 57 pellets, concentrated in stomach and small bowel, remain.

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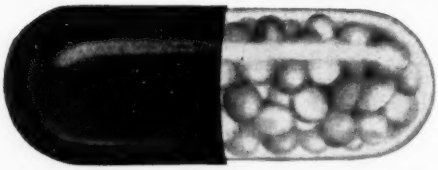
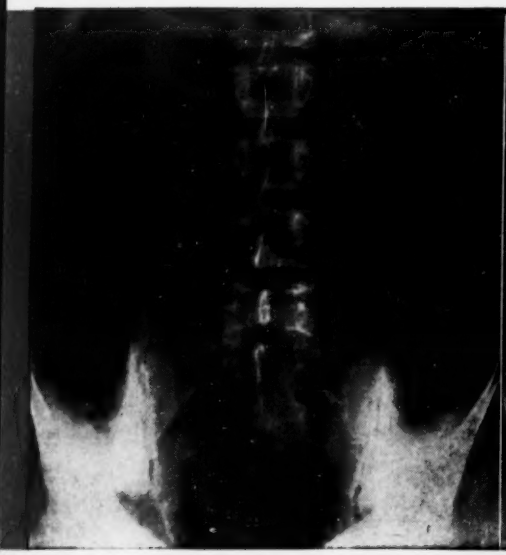
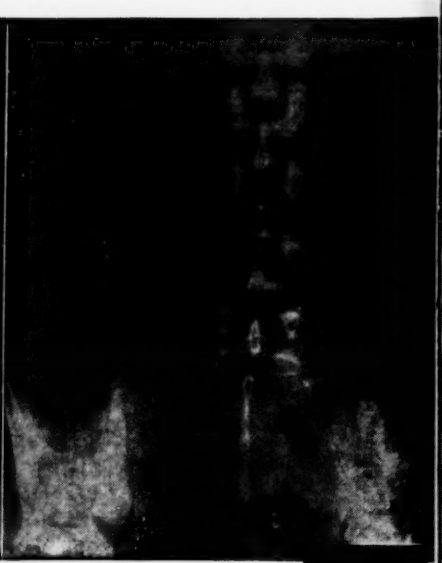




2 p.m.

6¼ hours after ingestion of one 'Spansule' sustained release capsule. 32 pellets remain intact: they are in the small bowel.



5 p.m.

9¼ hours after ingestion of one 'Spansule' capsule. The 14 surviving pellets are nearing termination of small bowel.

voluntary submission to abortion a bar to suit for damages.

In any event, in a state such as in Minnesota, where voluntary sterilization is not forbidden, it seems impossible to reconcile such a decision with a theory that a patient submitting to vasectomy or salpingectomy can hold the surgeon liable in damages even if there was no medical necessity for the operation.

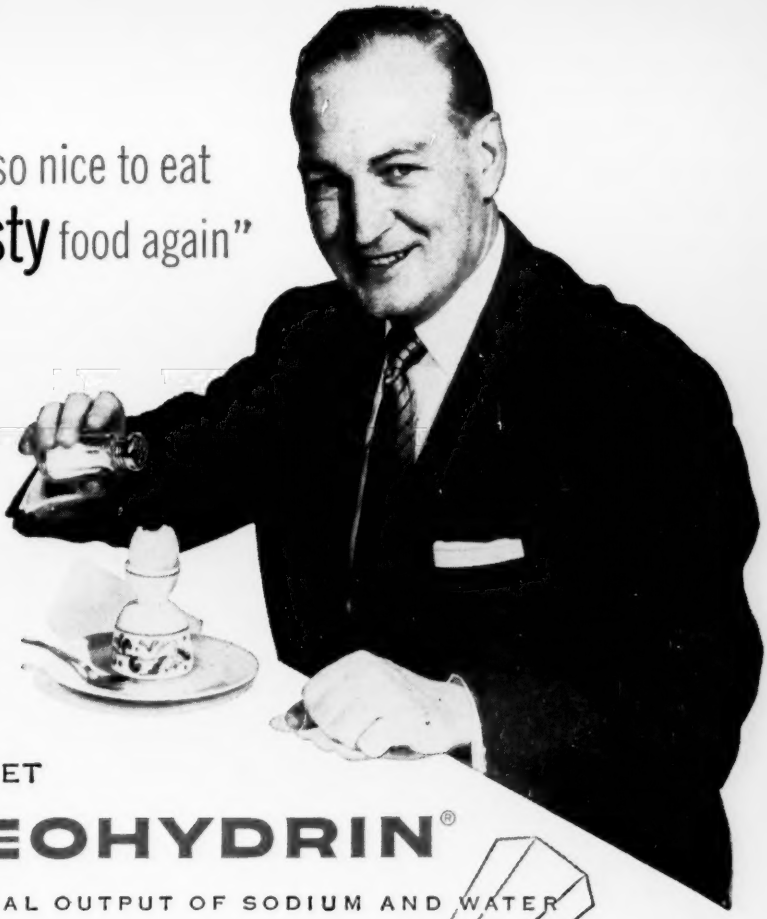
Turning to states where no binding consent to illegal abortion can be given, the Ohio Supreme Court has based its decision upon the inability of a woman to consent to taking the life of an infant in process of birth and endangering her own life (110 Ohio St. 381, 144 N. E. 264). Thus the analogy fails completely as to vasectomy and diminishes as to salpingectomy, to the extent that it is less dangerous than abortion.

Such analogies as are found in cases involving the civil liability of a doctor for performing illegal abortion appear to support a view that, in the absence of a statute making voluntary sterilization a punishable offense, no liability exists; and that, even when there is such a statute, the courts might declare absence of civil liability.

A comparison of abortion cases reveals [1] that the factors of public policy which denounce unauthorized abortion are largely, if not completely, absent in sterilization

(Continued on page 48)

"it's so nice to eat
tasty food again"



TABLET

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PRESCRIBE NEOHYDRIN whenever there is retention of sodium and water except in acute nephritis and in intractable oliguric states. You can balance the output of salt and water against a more physiologic intake by individualizing dosage. From one to six tablets a day, as needed.

PRESCRIBE NEOHYDRIN in bottles of 50 tablets. There are 18.3 mg. of 3-chloromercuri-2-methoxy-propylurea in each tablet.

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operations, particularly vasectomy, and [2] that the courts in different states disagree upon the right of anyone to sue a doctor for an illegal abortion to which consent has been given.

The Oklahoma Supreme Court reflected a general judicial view in noting that abortion is legally abhorred principally because it fosters immorality of unmarried persons, deprives life of unborn infants, and also endangers the life of the mother (176 Okla. 115, 54 Pac. 2d 666).

Judicial and statutory intimations in some states, drawn from declarations that voluntary sterilization is permissible only if supported by "medical necessity," place the operation on the same level as abortion. However, there seems to be no legislative or judicial explanation of the theory upon which voluntary sterilization without medical necessity, particularly vasectomy, is to be regarded as against public policy.

A New Jersey Supreme Court decision states that right of a state to deal with sterilization is limited by the scope of its police power to protect the public welfare and must be exercised without infringing the personal liberty guaranteed by the federal Constitution (86 N. J. L. 46, 88 Atl. 963). This court annulled a statute providing for involuntary sterilization of certain defectives and criminals, as applied to a female inmate of a public institution. The peculiar hazards of salpingectomy, lack of the patient's consent, and right to select the surgeon were emphasized.

On the other hand, the Virginia Supreme Court of Appeals upheld a similar statute which premised a legislative finding that either vasectomy or salpingectomy "may be performed without serious pain or substantial danger to the life of the patient" (143 Va. 310, 130 S. E. 516, 51 A. L. R. 855, affirmed by the U. S. Supreme Court, 274 U. S. 200, 47 Sup. Ct. 584).

Factually similar to the Minnesota vasectomy case previously discussed, except that a salpingectomy was involved, was a case decided in 1947 by the North Dakota Supreme Court (28 N. W. 2d 530). An operation was unsuccessfully performed to guard against a second pregnancy after a cesarean section. The husband sued for alleged neglect to operate effectively.

Both spouses having consented to the salpingectomy, it seems to have been tacitly conceded that the operation was not illegal. On appeal from a judgment for damages in favor of the husband, the only question presented was whether the claim was outlawed. The Supreme Court said that it was not, as the statutory time for suing did not commence until the second pregnancy, as distinguished from the date of the operation.

In a decision of the New York Court of Appeals in 1918, it was stated that a statute forbidding sale or advertisement of contraceptives or soliciting oral information concerning their use was not unconstitutional (222 N. Y. 192, 118 N. E. 637).

The argument that this law would unreasonably prevent a phy-

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42%

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18%

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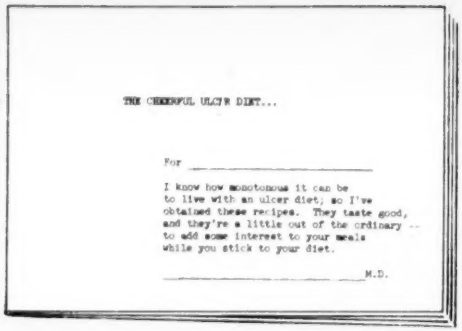
1. Bralow, S. P., Spellberg, M., Kroll, H., and Necheles, H.: *Am. Jour. Digest. Dis.*, 17:119, Apr., 1950.
2. Hardt, L. L., and Steigmann, Frederick: *Am. Jour. Digest. Dis.*, 17:195, June, 1950.

(*Turn page* for new ulcer diet recipes) ▶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Doctor: These recipes for the maintenance diet will carry the authority of your signature. The format, dignified yet informal, gives the impression that you have obtained the recipes especially for your patients. Rules for diets and special ulcer recipes are included.

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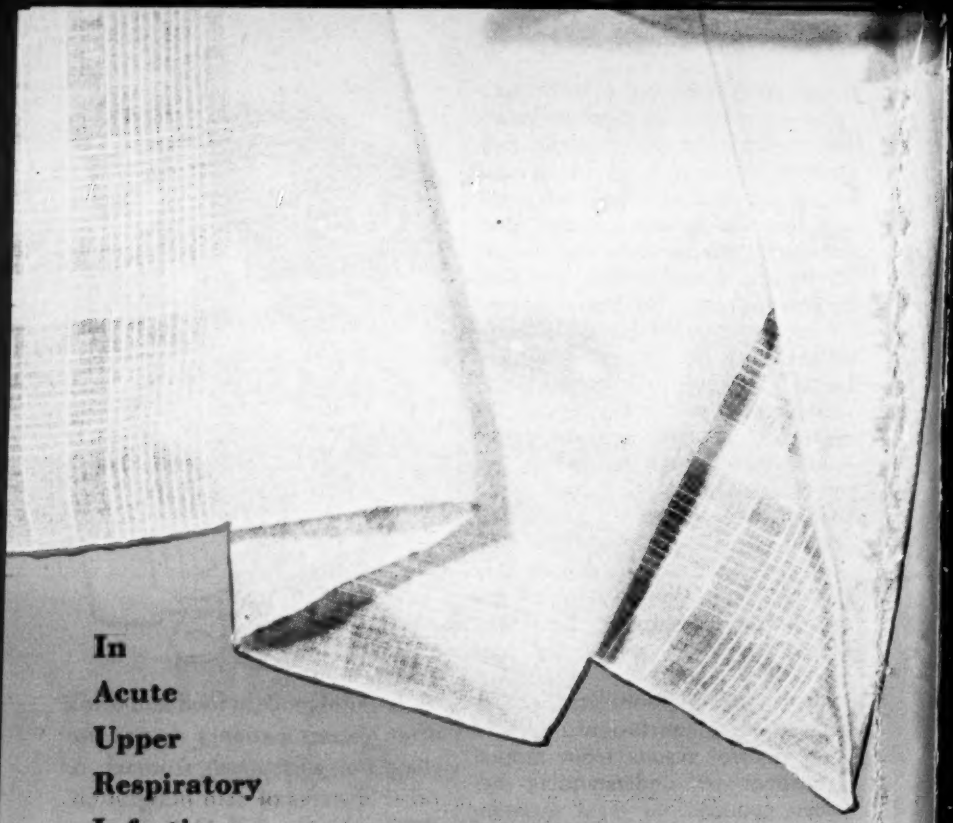
sician from advising and helping "married patients in a proper case" was rejected on the grounds that accused was not a physician and so not entitled to raise that point and that the statute specified that contraceptives could be supplied to physicians or upon their direction or prescription. The court stated: "This exception in behalf of physicians does not permit advertisements regarding such matters, *nor promiscuous advice to patients irrespective of their condition,* but it is broad enough to protect the physician who in good faith gives such help or advice to a *married* person *to cure or prevent disease.*"

The U. S. Supreme Court dismissed a petition for review of the case on the procedural ground that it had no jurisdiction in the case (251 U. S. 537).

Numerous decisions are cited to support these conclusions: "Where birth control results from mutual agreement or understanding between spouses, no legal question is apt to arise, at least as concerns the rights of the parties inter se. But serious legal questions have arisen . . . where the desire to avoid the procreation of children is unilateral, and contraception is practiced or insisted upon by one spouse against the wishes of the other" (4 A. L. R. 2d 227).

One of the cited cases involved unilateral contraceptive steps taken by a wife contrary to the tenets of the church to which both spouses belonged (22 N. Y. Supp. 2d 827). The court said that it might give the husband ground for a legal separation but not for annulment of the marriage on the ground of fraud.

(Continued on page 52)



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Provides symptomatic relief *PLUS* the prevention and
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A.P.C.—for its analgesic-antipyretic action

Acetylsalicylic acid—2½ gr.
Phenacetin—2 gr.
Caffeine—½ gr.

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Antihistamine—for mild sedation and symptomatic relief, particularly from profuse nasal secretions

Phenyltoloxamine dihydrogen citrate—25 mg.

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Penicillin—for prevention and control of secondary infections

Procaine penicillin G . . . 100,000 units.

Dosage: Usual adult dosage is 2 tablets t.i.d., one hour before or two hours after meals, continued for at least three days.

WHITE LABORATORIES, INC., KENILWORTH, N. J.

No court decision seems to support a view that mutually arranged contraception in violation of religious tenets without violating a statute would entitle husband and wife to repudiate consent to sterilization for the purposes of recovering damages from the surgeon. It appears they would have a right to hold him liable for malpractice, but, by the same token, they should be unable to sue on a theory of invalidity of the contract for the operation.

This discussion has proceeded upon an assumption that no medical necessity exists in a given case. However, it is to be remembered that if medical necessity is to be regarded as material or vital, that necessity should be viewed as it reasonably appears to the doctor when he operates, as distinguished from postoperative showing. A doctor is not guilty of illegal abortion if he operates under reasonable belief that it is essential to the life of the mother (1 C. J. S. 322, Sec. 13).

For even stronger reasons, there should be no civil or criminal liability for a vasectomy or salpingectomy reasonably deemed necessary to avert a greater hazard of childbirth. Expert medical testimony would probably prove to be of controlling importance as to the reasonableness of a surgeon's finding of medical necessity for sterilization.

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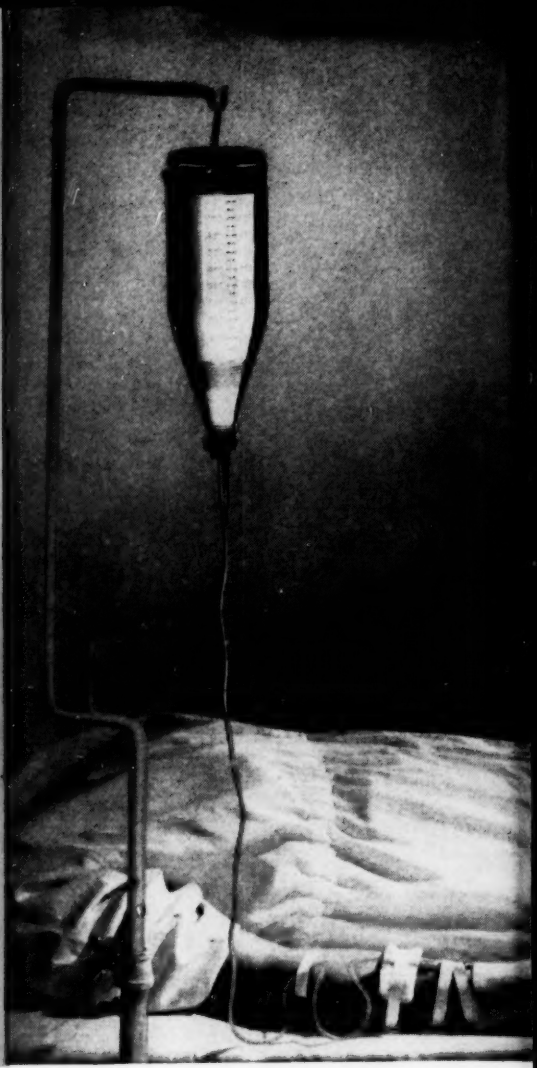

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Riboflavin (B_2)	10 mg.
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Washington LETTER

Last Minute Executive Branch Appointments Made

THE closing days of Congress last month were marked by the usual last minute rush of appropriations bills and by an unusual number of important appointments to the new Administration's executive branch. A number of the appointees are men who will prepare the reports, budgets, and requests of the Administration in time for consideration in January, when Congress convenes again.

Medically, perhaps the most important addition was the appointment of Dr. Chester Keefer to the long vacant post of special assistant to Mrs. Hobby for health and medical matters. Dr. Keefer is professor of medicine at Boston University and physician-in-chief at Massachusetts Memorial Hospital. He is perhaps best remembered for his work on procurement and distribution of penicillin and streptomycin during World War II and as chairman of the National Research Council's committee on chemotherapeutics, a group which advised on medical stockpiling for civil defense.

As expected, the other big medical post went to Dr. Melvin A. Casberg who is the new assistant secretary of defense for health and medical affairs. Dr. Casberg had been an assistant to Defense Secretary Wilson and also was formerly chairman of the Armed Forces Medical Policy Council and dean of St. Louis University Medical School.

"By golly, you're right!"

Other noteworthy appointments for the Department of Health, Education and Welfare were those of Nelson Rockefeller as undersecretary, Donald Counihan as assistant in charge

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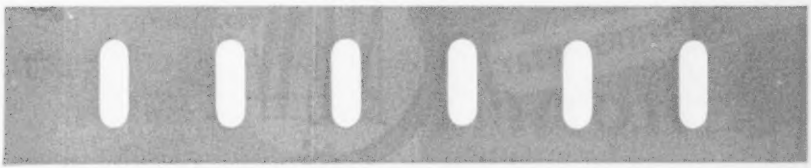
Each teaspoonful (5 cc.) contains:

Ferric ammonium citrate	200.0 mg.	Folic acid	0.33 mg.
Vitamin B_{12} U.S.P. (crystalline)	4.0 mcg.	Thiamine HCl (B_1)	1.5 mg.
Extractive as obtained from fresh gastric tissue	450.0 mg.	Riboflavin (B_2)	1.0 mg.
		Pyridoxine HCl (B_6)	0.2 mg.

Suggested Dosage: Adults: 1 to 2 teaspoonfuls. Children: ½ to 1 teaspoonful. Three times daily, or more as required. Preferably taken with food. No. 940 – Supplied in bottles of 16 fluidounces and 1 gallon.



"Bemotinic" Capsules

Each capsule contains:

Ferrous sulfate exsic. (3 gr.)	200.0 mg.	Desiccated liver substance, N.F.	100.0 mg.
Vitamin B_{12} U.S.P. (crystalline)	10.0 mcg.	Folic acid	0.67 mg.
Gastric mucosa (dried)	100.0 mg.	Thiamine HCl (B_1)	10.0 mg.
		Vitamin C (ascorbic acid)	50.0 mg.

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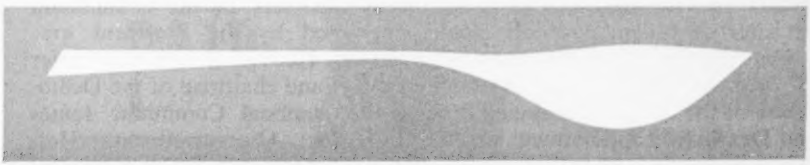
These two dosage forms provide essential factors — including a B_{12} potentiator — for maximal hemopoietic and clinical response.



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Each teaspoonful (5 cc.) contains:

Ferric ammonium citrate	200.0 mg.	Folic acid	0.33 mg.
Vitamin B_{12} U.S.P. (crystalline)	4.0 mcg.	Thiamine HCl (B_1)	1.5 mg.
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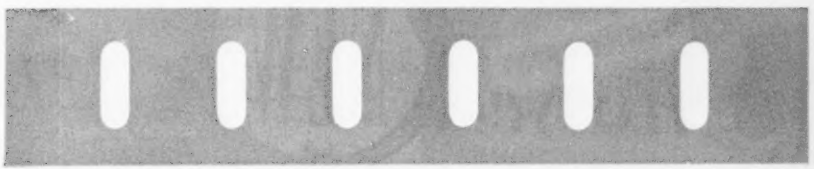
No. 940 — Supplied in bottles of 16 fluidounces and 1 gallon.



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of congressional liaison, and Russell R. Larmon as assistant secretary.

Elsewhere in government, Harvey H. Higley was named head of the Veterans Administration and Dr. James R. Shaw was made chief of the health programs for the Bureau of Indian Affairs. Dr. Shaw stepped out of a job as chief of the division of hospitals in Public Health Service to take the post. Transfer of Indian hospitals from Interior Department to Department of Health, Education and Welfare is one of the issues left hanging fire and Dr. Shaw's appointment might be an indication that the transfer will finally be made next session of Congress.

The other major appointment news in Washington was naming of the Commission on Organization of the Executive Branch of the Government. When President Eisenhower announced that former President Herbert Hoover had accepted a position on the new 12-man commission, the long-titled group was given the shorter name of "new Hoover Commission." The four members of the commission appointed by the President are: Herbert Hoover; former postmaster general and chairman of the Democratic National Committee James J. Farley; Attorney General Herbert Brownell; and Office of Defense Mobilization Director Arthur

(Continued on page 64)

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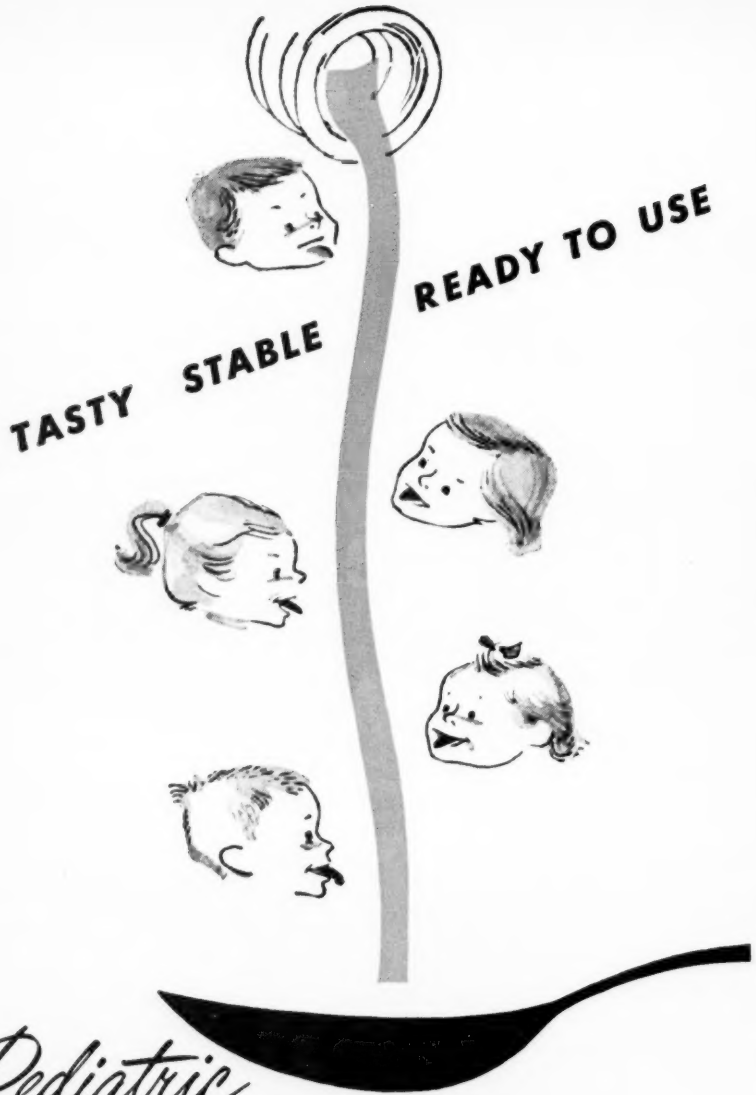

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in children sensitive to other antibiotics or when the causative organism is resistant to them

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because it is less likely to alter the normal intestinal flora than other oral antibiotics, except penicillin

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in antibiotic therapy, *Pediatric* ERYTHROCIN Oral Suspension provides the effectiveness of ERYTHROCIN in a sweet, cinnamon-flavored form. There's no problem in administration—tests show that children really like this orange-colored preparation.

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Pediatric ERYTHROCIN Suspension is indicated in pharyngitis, scarlet fever, pneumonia, erysipelas, pyoderma, certain cases of osteomyelitis and other infectious conditions. *Especially indicated in staphylococcic infections*—because of the high incidence of staphylococcic resistance to penicillin and other antibiotics.

Recommended dosage is 2 to 3 mg./lb. (4.5 to 6.5 mg./Kg.) at four to six-hour intervals. Thus, one teaspoonful every four to six hours for a 50-pound child. Can be administered before, after or with meals. *Pediatric* ERYTHROCIN Stearate Oral Suspension, representing 100 mg. of ERYTHROCIN per 5-cc. teaspoonful, is supplied in 2-fluidounce, pour-lip bottles. Abbott

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S. Flemming. Vice President Nixon's four selections were: Sens. Homer Ferguson (R., Mich.) and John McClellan (D., Ark.); President of the American Bar Association and dean of Southern Methodist University Law School, Robert G. Storey; and the dean of the School of Civil Engineering at Cornell University, Solomon Hollister. Speaker of the House Joseph Martin's four selections were: Congressmen Clarence Brown (R., Ohio) and Chet Holifield (D., Calif.); former U. S. Ambassador to Great Britain, Joseph P. Kennedy; and New York businessman, Sidney Mitchell. Five of these men—Hoover, Flemming, McClellan, Brown, and Kennedy—are members of the original Hoover Commission on reorganization. The new group has until May 31, 1955 to report to Congress.

Although Congress is not in session, two committees will be working right on through the fall. Congressman Carl T. Curtis has announced that his hearings on possible revisions of the social security law will resume November 2. The committee heard witnesses from Bureau of the Census and Bureau of Internal Revenue shortly before Congress went home. The House Ways and Means Committee stayed in session to finish up hearings on revisions in the income tax field. Long after other Congressmen had

(Continued on page 228)

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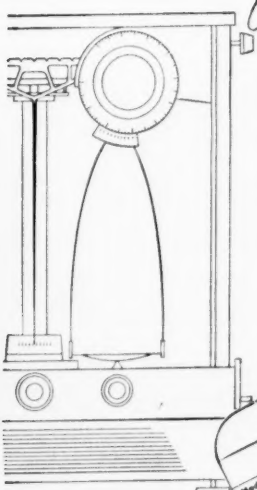

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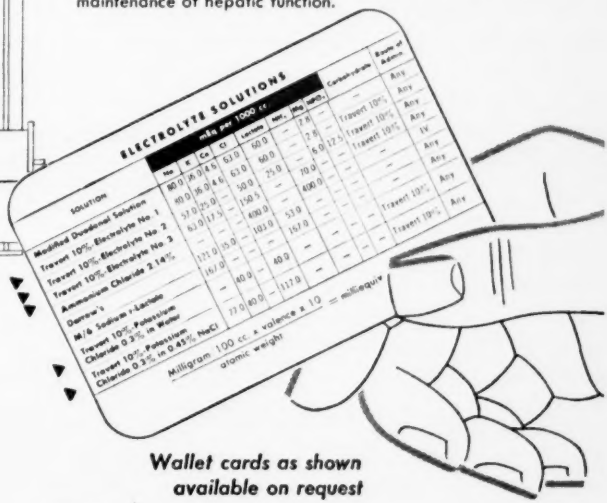

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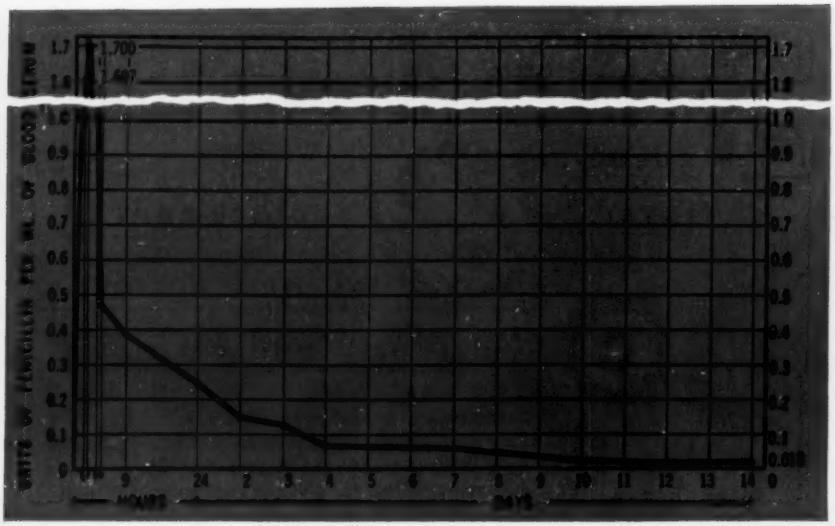

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MODERN MEDICINE
THE JOURNAL OF DIAGNOSIS AND TREATMENT

THE EDITOR'S PAGE

by WALTER C. ALVAREZ, *Editor-in-Chief*

Legible Lantern Slides

I have just returned from a series of medical conventions at which I was constantly being distressed by lantern slides with so much tiny print that no one could make them out, even when sitting in one of the first 10 rows. When seated down in front I could sometimes read the text, but not enough in the few seconds available to get any information. In many cases the essential material could have been shown much better by graphs or bars.

Why will physicians do such a foolish thing as to prepare slides that serve only to waste some of the ten or fifteen minutes given for a presentation? Loss of audience attention and interest is the worst thing that can happen during a talk.

My old friend Dr. Richard Hewitt of the editorial staff of the Mayo Clinic once made a study which showed that it doesn't pay to put more than a few short lines of text on a slide. Every physician who uses lantern slides ought to throw them on the screen and then go to the back half of a hall to see if he can read the text. If he can't read the legends easily, the slides will be worse than useless.

Another foolish thing that many of us do at medical meetings is to project a graph with perhaps 2 or 3 slanting lines and then, without identifying what each represents, continue our lecture. The audience hasn't the remotest idea what we are talking about. Everyone who reads papers and shows graphs should train himself never to start talking about a slanting line until he has said something like this: "Here on the left, the figures represent milligrams of urea in 100 cc. of blood, and here below the figures

represent days after the patient entered the hospital." Then perhaps the audience will understand.

Also, the man who wants to demonstrate a section of diseased tissue had better take a little more time to point out details. Only a few men in the audience, men who once had good training in pathology and still remember what they learned, will see in a moment what the sections show.

Diagnostic Test for Tuberculosis

It is a nuisance to have to wait six weeks or more for a guinea pig to die after the animal has been injected with material suspected of containing tubercle bacilli. Now Drs. John Buddingh and J. W. Breuck of Louisiana State University report a method of injecting material into the yolk sac of a partly grown chicken embryo. The embryo is then incubated for four days, and if a few organisms were in the material, they will have multiplied so much as to be easily seen with the microscope.

The disadvantage of this test is that only an occasional laboratory has someone working with egg embryos. It is a special technic. Perhaps the workers in large city laboratories, in which the egg embryo technic is being used for virus research, will perform this service for diagnostic laboratories.

Estrogenic Hormones and Small Breasts

Many women ask their physicians for estrogenic hormone to increase the size of the breasts. One of the country's authorities in the field of hormone study has said that the only women likely to benefit from such treatment are those who were born with very small or inadequate ovaries or who never menstruated well or were castrated early in life. In such cases the breasts might well be made larger by estrogenic hormones. But the woman who has normal amounts of estrogen, as shown by the fact that she is menstruating regularly and well, and perhaps has had children, is not likely to be helped by taking more hormones.

If a eunuchoid type of man has testicles the size of beans, androsterones may help to give him sexual potency, a deeper voice, and perhaps a little hair on his face. But if a man is normal and well-built, with normally functioning testicles, administration of male hormone is not likely to do him much good; he already has enough for all his needs.

Speculation and empiricism serve to obscure the true status of hormones in chronic peptic ulcer.

Hormonal Factors in Peptic Ulcer

JOSEPH B. KIRSNER, M.D.
University of Chicago

NO consistent relationship can be found between primary endocrine diseases and chronic peptic ulcer in man.

Evidence of endocrine dysfunction in a significant number of ulcer patients or objective evidence of ulcer in persons with endocrine disorders should be demonstrable if hormonal disorders are important in the pathogenesis of peptic ulcer.

The influence of alterations in endocrine function upon the gastrointestinal tracts of animals has been studied, but species differences, the highly artificial nature of the experiments, and the multiple effects limit the applicability of the results to human beings, states Joseph B. Kirsner, M.D.

The gastrointestinal tracts of animals are extremely sensitive to stress, and many nonspecific stimuli will induce hemorrhages, erosions, and superficial ulcerations. These lesions are thought to result from the release of ACTH from the pituitary and the stimulation of adrenal cortical function, with deleterious effects upon the stomach and duodenum. Similar lesions may develop without the hypophysis or adrenal, probably because of decreased tissue resistance and increased autonomic activity.

The erosions and ulcerations in the gastrointestinal tract accompanying removal of the pituitary, thyroid, parathyroid, or adrenal glands or those induced by administration of posterior pituitary extract are identical with lesions produced by nonspecific stimuli and, therefore, do not constitute evidence of endocrine dysfunction as a cause of peptic ulcer.

The significant effects of the gastrointestinal hormones, gastrin and enterogastrone, in dogs have not been reproduced in man. Hyperfunction of the antrum has not been conclusively proved in patients with peptic ulcer. The action of an intravenous enterogastrone in man should be investigated.

Peptic ulcer in man seems to be rare with hypoparathyroidism and not uncommon with hyperparathyroidism; yet, in dogs, the output of hydrochloric acid is increased by hypocalcemia and reduced by hypercalcemia.

Chronic ulceration is rare with Addison's disease. The ulcers accompanying adrenal crises are superficial and heal rapidly when adrenal function is restored. Peptic ulcer is apparently rare with adrenocortical hyperactivity of the adrenogenital type. Consequently no ob-

Hormones and peptic ulcer. Bull. New York Acad. Med. 29:477-504, 1953.

vious rationale exists for treating ulcers with adrenal cortical hormones.

The comparatively low occurrence rate of peptic ulcer in adult women during the active reproductive period, apparent ulcer healing early in pregnancy, and the increased frequency of ulcer after the menopause suggest a protective influence of the female sex hormones. Administration of the hormones does not decisively decrease gastric secretion or improve resistance of the gastroduodenal mucosa to acid indigestion. Hormones originating in the hyperactive maternal adrenals or possibly in the placenta may contribute to increased gastric secretion late in pregnancy.

Chorionic gonadotropins administered alone or with estrogens and serum gonadotropins do not impressively reduce gastric secretion. The improvement of Mann-Williamson ulcers in dogs given chorionic gonadotropin and uroanthelone is not directly applicable to man.

Investigation is indicated of the effects upon gastric secretion of maximal, yet clinically tolerable, quantities of sex hormones, both male and female. More data are also needed to confirm the apparent beneficial influence of pregnancy upon peptic ulcers. Factors in the urine decreasing gastric secretion and presumably protecting against experimental ulcer should be identified.

Improved Urine Bilirubin Test

GERALD KLATSKIN, M.D., AND LUITGARD BUNGARDS, M.D.

THE diazo mat test for detecting bilirubin in urine is simple, sensitive, and specific. Gerald Klatskin, M.D., and Luitgard Bungards, M.D., of Yale University, New Haven, Conn., find the procedure capable of detecting concentrations of bilirubin as low as 0.05 mg. per 100 cc. of urine.

A special bibulous cellulose-asbestos mat with unusual affinity for, and capacity to concentrate, biluribin is used; 5 drops of urine are allowed to settle on the center of the mat, thus concentrating the bilirubin in a small circle. A reagent tablet containing a stable diazonium salt is then placed on the moist mat and flooded with 2 drops of water.

A purple or blue color developing around the tablet within thirty seconds denotes presence of bilirubin. Traces of albumin produce a pink color, easily distinguishable.

Exposure of the urine to light does not affect the test provided the urine is refrigerated. Storage of urine at room temperature up to two hours does not materially affect results of the test.

An improved test for bilirubin in urine. New England J. Med. 248:712-717, 1953.

High capillary blood pressure associated with arterial hypertension is probably an unfavorable sign.

Measuring Capillary Blood Pressure

ELI DAVIS, M.D.
Rothschild-Hadassah University Hospital, Jerusalem

WITH grave hypertensive illness, severe renal and retinal damage, and cerebral complications, capillary blood pressure often rises to or above 45 mm. of mercury. The high levels may be a protective device to counteract slow circulation or increase permeability when the lumen is narrowed and surface area diminished.

A simple, reliable technic of measurement is employed by Eli Davis, M.D. With the nailbed under the microscope, capillary blood flow is stopped and released and pressure recorded by an ordinary sphygmomanometer that is connected to the finger.

A cuff designed for the newborn infant's arm is fastened around the second phalanx and distal joint. The hand is held at heart level. Cuff pressure is quickly raised to about 60 mm. when arterial values are normal, or to 75 mm. with hypertension.

When all visible capillary flow ceases, pressure is reduced 5 mm. every thirty to sixty seconds until normal brisk circulation is resumed in several capillaries; pressure is then recorded.

As pressure falls, 3 stages may precede normal flow: [1] direction may be reversed from the venous to the arterial limb of the capillary, [2] red cells may then oscillate without making headway, and [3] flow may commence very slowly. Any or all phases may be lacking.

All readings are done at least twice and commonly three times in the same group of capillaries, and behavior of adjacent capillaries is noted. Serial values usually agree, in spite of the fact that visibility of blood flow may vary.

Capillary blood pressure was determined for 130 subjects, 73 with normal arterial pressure and 57 with hypertension.

In the majority of nonhypertensive cases, capillary levels were 8 to 24 mm. with an average of 20 mm. Only 8 of 69 normotensive patients had capillary levels of 45 mm. or more; the high values were associated with purpura simplex, atheroma, chronic nephritis, rheumatic valvulitis, vasomotor disturbance, and disseminated lupus erythematosus.

Of the 57 patients with high arterial pressure, 23 had capillary increase. Nailbed vessels were diseased in 21 of 34 hypertensive subjects with normal capillary pressure,

Clinical method for measuring capillary blood pressure and its application in hypertension. Arch. Int. Med. 91:715-720, 1953.

and in 19 of 23 with high readings.

Elevated capillary values were closely related to actual illness and to severe chronic renal damage. Of 13 persons with albuminuria, 9 had high capillary pressures and pronounced capillary lesions.

Although no cerebral vascular disorders occurred with normal capillary records, 3 individuals with raised values had persistent hemiplegia, and 2 had transient paralysis.

No direct relation was observed between high capillary pressure and age, cardiac complications, or diastolic arterial pressure of 95 or more.

Posthepatitic Cirrhosis

ARCHIE H. BAGGENSTOSS, M.D., AND
MAURICE H. STAUFFER, M.D.

THOUGH a rare complication, cirrhosis may follow viral hepatitis and cause fatal hepatic insufficiency or hemorrhage.

In reviewing 43 cases at the Mayo Clinic, Rochester, Minn., Archie H. Baggenstoss, M.D., and Maurice H. Stauffer, M.D., find that posthepatitic cirrhosis differs from Laennec's or alcoholic cirrhosis in occurring at a younger age and chiefly among females; in the greater incidence of jaundice as an early symptom; and in having a relentless and rapid course. Moreover, ascites is rarely an early symptom and occurs in only about one-third of cases. Paracentesis is required infrequently and repeated paracenteses are unusual.

Livers are smaller than with Laennec's cirrhosis and esophageal varices less frequent. Bizarre cellular forms are common and fatty infiltration is relatively infrequent. Bleeding in the form of epistaxis, bleeding gums, petechiae, or ecchymoses appear in about one-third of cases as do hepatomegaly and splenomegaly.

The direct-reacting serum bilirubin ranges from 25.4 to 0.5 mg. per 100 cc. A deficiency of prothrombin that is not corrected by vitamin K therapy is common. Hyperglobulinemia is often noted. Thymol turbidity and cephalin-cholesterol flocculation are usually positive.

The livers in cases of posthepatitic cirrhosis may be divided into three groups: lobar, nodular, and granular. Lobar and nodular livers have large regenerative nodules and are found in patients with a mean age of 30 years; the large nodules may represent extremely vigorous regeneration, a feature of youth. The granular group has a mean age of 50; the small, underdeveloped nodules in this group may be due to lessened power of regrowth.

Posthepatitic cirrhosis. Proc. Staff Meet., Mayo Clin. 28:320-329, 1953.

Similar rheumatic manifestations of the several collagen diseases pose a problem in differential diagnosis.

The Pararheumatic Arthropathies

H. HAROLD FRIEDMAN, M.D.
University of Colorado, Denver

SHELDON SCHWARTZ, M.D., MAX TRUBEK, M.D., AND OTTO STEINBROCKER, M.D.
New York University, New York City

MUSCULAR and articular symptoms are commonly the presenting complaints with lupus erythematosus, periarteritis nodosa, scleroderma, and dermatomyositis, the so-called pararheumatic diseases.

Among the diffuse collagen diseases, the pararheumatic disorders are distinguished from the rheumatic disturbances—rheumatic fever and rheumatoid arthritis—by more serious prognosis and the adverse response to the forms of treatment used for rheumatoid arthritis, such as ultraviolet irradiation, fever therapy, and chrysotherapy (see table).

H. Harold Friedman, M.D., Sheldon Schwartz, M.D., Max Trubek, M.D., and Otto Steinbrocker, M.D., divide the pararheumatic arthropathies into three major categories.

• In the first group, myalgias and arthralgias, the symptoms are usually of recurrent pain, tenderness and stiffness affecting various muscles and joints, and may be of long duration. True fibrositis can be differentiated by the self-limited course, normal temperature, and lack of cutaneous lesions or visceral involvement.

• The second group is characterized by recurrent attacks of acute and subacute migratory polyarthritis involving both large and small joints of the extremities. Pain, tenderness, swelling, and stiffness and sometimes local heat and redness are noted. Rheumatic fever is frequently misdiagnosed in these cases, especially when the arthropathy is accompanied by a heart murmur, tachycardia, pleuritis, or pericarditis. The presence of cutaneous eruptions, widespread visceral lesions, and the course aid in the differentiation.

• The third category is a chronic progressive, deforming polyarthritis often mistaken for rheumatoid arthritis. An accurate diagnosis is of the utmost importance before using such therapy as gold salts and other metals, ultraviolet and sunlight, fever or roentgen therapy or removal of foci of infection. A rapidly fatal termination may follow use of these procedures in the pararheumatic diseases.

The possibility of pararheumatic

The "pararheumatic" arthropathies. Ann. Int. Med. 38:732-758, 1953.

Differential Diagnosis of the Collagen Diseases

	PARARHEUMATIC DISEASES				RHEUMATIC DISEASES	
	Disseminated L.E.	Periarteritis Nodosa	Diffuse Scleroderma	Dermatomyositis	Rheumatic Fever	Rheumatoid Arthritis
Age	2d-3rd decades	Any age; chiefly 3rd-4th decades	3rd-5th decades	Any age; chiefly 10-50 years	In 90% onset before 15 years	Any age; chiefly 3rd-4th decades
Sex incidence	Females 80%	Males 65%	Chiefly females	Equal	Equal	Slight female preponderance
Onset	Acute or insidious	Acute or insidious	Insidious	Insidious	Acute, sometimes insidious	Insidious; acute in 10%
Fever	Afebrile to irregular or septic	Afebrile to irregular or septic	None until late	Low grade	Low grade to high	Low grade or afebrile
Skin manifestations	Typical erythematous butterfly eruption on face; photosensitivity	Erythematous, purpuric, or maculopapular eruption in few cases	Edema, induration, pigmentation, and atrophy	Noncircumscribed erythema; occasional hypertrichosis; photosensitivity	In over 10% of cases, erythema nodosum, multiforme, or marginatum	Psoriasis in 2-3%
Cardiac manifestations	Atypical verrucous endocarditis in 30-50% (clinically silent); pericarditis; other myocardial abnormalities	Involvement of coronary arteries may lead to angina, infarction, congestive failure; pericarditis; ECG abnormalities	ECG abnormalities, arrhythmias, conduction disturbances	Tachycardia, ECG abnormalities, circulatory failure	Typical valvular involvement; pancarditis frequent	Clinical evidence of rheumatic heart disease in few cases; pathologically as high as 50%
Gastrointestinal manifestations	Uncommon; sometimes pain, vomiting, ascites	Abdominal pain, vomiting, bleeding	Dysphagia; esophagus and small intestine involved	Uncommon	Abdominal pain common	Anorexia, constipation
Renal manifestations	Hypertension; nephritis or nephrosis simulated; uremia	Hypertension; nephritis simulated; uremia	None	Uncommon; sometimes albuminuria and hematuria	None (glomerulonephritis in 5%)	None

Splenomegaly	Occurs	Occurs	None	Unusual	None	Sometimes
Lymphadenopathy	Common	Occasionally	None	None	None	Common
Involvement of serous membranes	Common	Uncommon	None	Rare	Not common	None
Funduscopic findings	Hemorrhages, fluffy exudates, peripapillary edema	Hemorrhages	Normal	Normal	Normal	Normal
Arthropathy	Almost always	In 35%	In over 50%	Common	Acute migratory polyarthritis; no permanent joint changes	Chronic, progressive, symmetric polyarthritis with deformity
Subcutaneous nodules	None	In about 20%	None	None	In about 20%	In about 20%
Laboratory findings	Leukopenia, anemia, elevated sedimentation rate; sometimes thrombocytopenia, L.E. cell	Leukocytosis with eosinophilia (30%); anemia, elevated ESR; thrombocytopenia sometimes	Anemia, normal sedimentation rate	Eosinophilia in 25%; elevated sedimentation rate	Leukocytosis; elevated sedimentation rate	Leukocytosis; elevated sedimentation rate if disease is active; anemia common
Miscellaneous features	Convulsions	Polyneuritis	Calcinosis	Creatinuria, calcinosis	Chorea	Paresthesias
Prognosis	Almost always fatal; death from toxemia, intercurrent infection, cardiac failure, or uremia	Recovery unusual; death from renal insufficiency, cardiac failure, intercurrent infection	Long duration; death from malnutrition, intercurrent infection, cardiopulmonary failure	Mortality 50-60% in 1-2 years; death from paralysis of respiratory muscles, cardiac involvement, intercurrent infection	Mortality less than 5% in acute phase; ultimately death from sequelae of valvular disease	Almost never fatal; morbidity high

arthropathy should be considered in cases of fibrositis associated with constitutional signs, especially fever; in acute or subacute polyarthritis of long duration and a downhill course or with signs of visceral lesions or if involvement of the serous membranes develop; in fulminating, deforming polyarthritis; in supposed rheumatoid arthritis when features of the typical disease do not develop within a reasonable period; or in arthritis with bizarre cutaneous lesions.

Christmas Disease, a Pseudohemophilic State

ROSEMARY BIGGS, M.D., AND ASSOCIATES

A HEMORRHAGIC ailment readily confused with hemophilia but of different origin has lately been identified. Since remedies also differ, diagnosis is important. The entity is called Christmas disease after the name of the first patient examined in detail, a 5-year-old boy.

Data on this and 6 other cases were compiled by Rosemary Biggs, M.D., A. S. Douglas, M.R.C.P., and R. G. Macfarlane, M.D., of Radcliffe Infirmary, Oxford, England; J. V. Dacie, M.D., and W. R. Pitney, M.D., of the Postgraduate Medical School, London; C. Merskey, M.D., University of Capetown, South Africa; and J. R. O'Brien, D.M., of South Devon and East Cornwall Hospital, Plymouth, England. Other investigators described 3 similar cases in 1950 and 1952. In all 10 instances, Christmas disease affected males.

Hemophilia is a severe bleeding tendency inherited by boys as a sex-linked recessive trait. Clotting power fails because blood thromboplastin is inadequate, owing to deficiency of antihemophilic globulin. The best treatment is transfusion with fresh blood or with a concentrate prepared from fibrinogen of fresh plasma.

In the newly recognized dyscrasia, inheritance is similar but may not be completely recessive. Antihemophilic globulin develops in normal amounts, and thromboplastin formation is reduced by want of another element, the so-called Christmas factor. The missing agent is obtained most easily from serum and in some respects is like serum factor VII of Koller and associates.

The clotting defect of Christmas disease is counteracted either by normal blood or by blood from a true hemophiliac, but concentrated preparations of antihemophilic globulin are ineffective.

In preliminary differential tests, the effects of normal and hemophilic plasma on the calcium clotting time of the subject's plasma are compared. A more exact diagnosis is made by the thromboplastin generation technic.

Christmas disease, a condition previously mistaken for hemophilia. Brit. M. J. 4799:1378-1382, 1952.

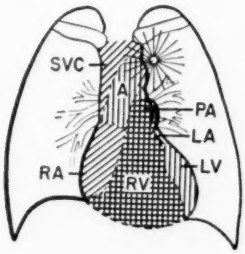
Patent ductus may be diagnosed on basis of pulse pressure and fluoroscopic and auscultatory findings.

Office Diagnosis of Patent Ductus

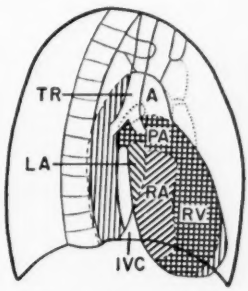
ROBERT TIDWELL, M.D., ROBERT RUSHMER, M.D., AND ROBERT POLLEY, M.D.
Seattle

Patent Ductus

► Prominent pulmonary artery and conus with dilated hilar vessels

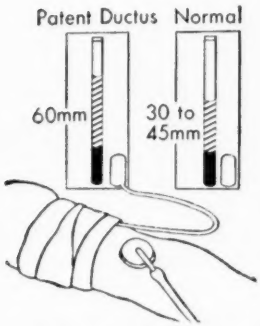


With patent ductus, anteroposterior view shows prominent pulmonary artery and conus with dilated hilar vessels



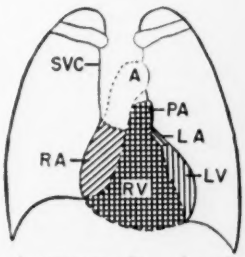
With patent ductus, right anterior oblique view shows prominent pulmonary conus

► Continuous or machinery-like murmur, accompanied by a thrill, best heard in an area between the second left interspace close to the sternum and just below the sternal portion of the left clavicle

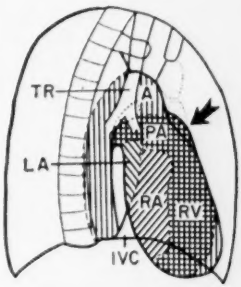


► Increase in pulse pressure to 60 mm. Hg or higher

Normal



Anteroposterior view by the fluoroscope



Right anterior oblique fluoroscopic view

KEY

TR—trachea
A—aorta
PA—pulmonary artery
LA—left auricle
RA—right auricle
LV—left ventricle
RV—right ventricle
IVC—inferior vena cava
SVC—superior vena cava

The office diagnosis of operable congenital heart lesions. Northwest Med. 52:546, 1953.

At least two criteria should be met in determining an allergic cause with Quincke's edema.

Quincke's Edema

EGON BRUUN, M.D.
University of Copenhagen

ALLERGIC etiology is demonstrable in most cases of Quincke's edema. Therefore, Egon Bruun, M.D., believes that this term, or acute circumscribed edema, is far better used to describe the disease than the designation angioneurotic edema, which may implicate the patient as a neurotic.

Recording of the history is most important. Careful study of food consumption, including a food diary or an elimination diet, may be necessary.

Exposure tests are often valuable. However, patients may have refractory periods. Test results may be negative if too small a quantity of antigen is used.

Cutaneous reactions are of little value in revealing drug allergy, are of some significance in cases of food allergy, and are important with inhalant or contact allergy.

Specific desensitization is a weak diagnostic tool but is useful in some cases.

The diagnosis of Quincke's edema from an allergic cause must be verified by at least 1 or more of the following 4 combinations:

1] Anamnesis and positive exposure reaction—drug, food, and cold allergy

2] Anamnesis and effect of discontinuance of the suspected allergen and a proper period of observation—drug, food, and bacterial allergy

3] Anamnesis and positive cutaneous reaction and specific desensitization with provocation of edema in the course of desensitization—contact, inhalant, and insect allergy

4] Anamnesis and positive cutaneous reactions or positive exposure reaction and effect of removal of the food in question—food allergy.

No age is spared, but persons from 30 to 50 years are more apt to have Quincke's edema; the condition is twice as common with females as with males. Angioneurotic edema occurs in as high a percentage of allergic families as asthma. Eosinophil counts are normal.

Drug allergy, particularly from acetylsalicylic acid or barbituric acid compounds, is the cause of about half of allergic cases of Quincke's edema. Food is the next most common source of the condition. Other causes are inhalant or contact, insect, bacterial, endocrine, and physical allergy.

Cases of allergy from bee sting may be desensitized with Forapin, an extract of bees' heads and chests. Cold allergy may be responsible for cases of unaccountable death by drowning. The edema caused by infection may be corrected by removal of foci.

The so-called angioneurotic edema. J. Allergy 24:97-105, 1953.

Exploitation of new agents may temporarily ameliorate symptoms in myeloid and lymphoid diseases.

Lymphomas and Leukemias

HENRY D. DIAMOND, M.D.
Cornell University, New York City

RECENT use of ionizing radiation, chemotherapy, viruses, and surgery has definitely increased the comfortable survival of patients with malignant lymphomas and leukemias.

Roentgen therapy may be of great benefit in the lymphomas. Hodgkin's disease or lymphosarcoma limited to a single locus after biopsy proof of diagnosis should be treated aggressively by x-rays, with theoretic cure in mind, states Henry D. Diamond, M.D.

Using high voltage x-rays in the range of 250 kilovolts and generous portals, a total dose of approximately 3,000 r fractionated over two or three weeks is delivered to the appropriate site. In a few cases radical surgical extirpation en bloc should be performed, followed by use of x-rays.

Patients with the disease limited regionally should be treated with x-rays at the sites of disease. If constitutional symptoms are noted, the roentgen application may be preceded by a course of nitrogen mustard (HN2 or TEM). Patients with Hodgkin's disease or lymphosarcoma that is generalized and causing constitutional symptoms should be given initial HN2 or TEM followed by roentgen therapy to areas of bulky involvement or to sites of disease mechanically compressing vital structures.

Selected radioisotopes are of distinct value in cases of polycythemia vera or chronic leukemia. Many investigators consider radioactive phosphorus (P^{32}) the best therapy for polycythemia vera. The material is also useful for chronic myeloid and lymphoid leukemia. Radioactive arsenic has the same uses.

The P^{32} may be given orally in a dose of 0.1 millicurie per kilogram of body weight either fractionally or in a single dose. A combination of P^{32} and local external roentgen therapy is especially effective for patients with chronic myeloid and lymphoid leukemia who have tumefaction of the spleen or lymph nodes.

Another approach to control of lymphomas and leukemias is by chemotherapy directed at the cellular level. HN2 is radiomimetic and has a histologic effect on tumor cells apparently identical to that of ionizing radiations. Results are the most consistent in Hodgkin's disease. Effects are definite but less predictable upon lymphosar-

Recent advances in the management of lymphomas and leukemias. M. Clin. North America 37:843-867, 1953.

comas and the leukemias. Remission may be produced in polycythemia vera.

Intravenous dosage with HN2 depends on the white blood cell level. All patients should be assessed clinically and hematologically with extreme care and blood counts should be made frequently during treatment. A greater dose may be given intraarterially.

TEM is an effective nitrogen mustard–like compound. The dosage, administered orally, should not exceed 10 mg. in any one week under ordinary conditions. Nausea and vomiting are less likely than with HN2.

Urethane, useful in the management of chronic leukemia, is especially valuable in treatment of plasma cell myeloma. Oral administration is preferable; the drug must be given over a long period of time.

Fowler's solution is employed for the chronic forms of leukemia and, occasionally, conjointly with steroids in the treatment of myelomonocytic forms of leukemia.

Recently, folic acid antagonists have been found effective in childhood leukemia. Apparently folic acid is necessary for the metabolism of leukemic white blood cells. Use of the folic acid antagonists such as Aminopterin reveals a remission rate in childhood acute leukemia of 25 to 30%, remissions lasting about one to two months. Patients benefited by the first course of therapy are usually helped by subsequent courses. In adult acute leukemia the remission rate is only 2 to 3%.

ACTH and cortisone are capable of inducing clinical and hematologic remissions in children with acute leukemia in approximately 50% of cases; the effect is not likely to extend to adults beyond the age of 30. Patients with Hodgkin's disease or lymphosarcoma, especially the follicular type, may be temporarily benefited. Cases of chronic lymphoid leukemia may show objective improvement, but not chronic myeloid leukemia. Remarkable improvement may be seen in plasma cell myeloma.

Virus therapy at the present time is not practical.

¶ REDUCTION OF ARTERIAL HYPERTENSION with methonium compounds is associated with progressive return of electrocardiographic abnormalities toward normal. The results observed in 75 patients treated with hexamethonium bromide or bitartrate or M. & B. 1863 are ascribed by A. E. Doyle, M.D., of the University of Otago, Dunedin, New Zealand, to lessening of the load of the left ventricle. The appearance of the ST and T waves improved in all subjects, normal tracings occurring in 26 of 54 persons and near-normal in 20 of the others. Cardiograms from 50 individuals with excessively high QRS voltage became normal in 32 cases and approached this condition in 6.

Am. Heart J. 45:363-381, 1953.

No single agent has yet proved satisfactory for hypertension; combined treatment is advised.

Drug Combinations for Hypertension

ROBERT W. WILKINS, M.D.
Boston University

FOR treatment of most patients with essential hypertension, combinations of drugs are more effective than any pharmaceutical agent alone, says Robert W. Wilkins, M.D.

The ganglionic blocking agents, such as hexamethonium, are the most powerful hypotensive drugs but are somewhat hazardous, varying widely in absorption from the gastrointestinal tract. Tolerance to the drug is rapidly developed and serious side effects, such as postural hypotension or bowel, bladder, or visual dysfunction, are frequently noted. These agents also need constant supervision.

The veratrum derivatives are safer and require less supervision. These drugs are effective, especially by parenteral administration, and are fully active by mouth, although nausea and vomiting frequently occur at dosages close to the therapeutic range.

Hydrazinophthalazine or hydralazine (Apresoline), a central adrenergic blocking agent, is readily absorbed by mouth but may cause severe headaches, tachycardia, and dependent edema. For about half of patients, prolonged administration somewhat lowers the blood pressure, particularly the diastolic. Side effects, especially anginal pain, may force discontinuance.

Rauvolfia as Serpina, a sedative-like drug, relaxes the patient and provides symptomatic relief, especially for anxious hypertensive neurotic patients, but is disappointing as a single agent for lowering blood pressure. The drug causes moderate hypotension, bradycardia, nasal stuffiness, and a tendency to gain weight. All effects are slight and slow to appear and disappear.

Reserpin, the pure alkaloid derived from Rauvolfia, contains the sedative fraction of the drug and requires from three to six days to become active, three to six weeks to reach maximum effect, and three to fourteen days to pass off.

The addition of Rauvolfia to the therapeutic schedule of a patient receiving veratrum or hydralazine frequently results in a further reduction of pressure and with less side effects, usually because the dose of the first drug can be reduced. Occasionally a third agent is necessary in a regimen of two drugs before blood pressure can be reduced.

Therapy should be instituted with caution and deliberation, keeping in mind that essential hypertension

Combination of drugs in the treatment of essential hypertension. Mississippi Doctor 30:359-363, 1953.

is a chronic disease with a course of about twenty years. Methonium compounds should be employed only in the severest cases and after a trial of other less potent agents.

The methonium derivatives are more dangerous when combined with other hypotensive drugs than when administered alone. Therapy should always be instituted in a hospital and continued under closest supervision with blood pressure determinations at least several times daily. Hexamethonium is not safe orally and, when used in selected cases, should be administered subcutaneously in combination with hydralazine.

Hydralazine may cause suppression of the bone marrow and a state resembling status anginosus. Either of these complications demands cessation of the drug.

PLAN OF TREATMENT

A patient with only moderately severe hypertension, especially with tachycardia and anxiety, receives Serpina, 1 tablet, 125 mg. of crude root, once or twice a day. This drug is the mildest of the hypotensive agents and most consistently relieves symptoms. If the patient becomes too sleepy, the dose should be halved. No more than 4 tablets a day should be prescribed.

In severe cases or when this regimen is inadequate, hydralazine, 10 mg. (12.5 mg.) four times a day, at meals and at bedtime, is added, increasing the dose gradually to 25 or even 50 mg. four times a day. The patient is warned to reduce, not discontinue, dosage if headache or palpitation is distressing, but to resume a gradually increasing dosage as rapidly as possible.

The patient should return in one week but may go as long as two to four weeks, when, depending on results, the dosage is increased gradually to 100 mg. four times daily. Doses of hydralazine above 800 mg., probably even 600 mg., a day are unwarranted.

Instead of hydralazine, veratrum may be added to the Rauvolfia schedule, especially when the pulse rate is above 90. Veriloid is started with 2 mg. four times a day. The patient should reduce slightly, not discontinue the dosage in case of nausea and should increase the breakfast and bedtime dose to 3 mg. if possible.

All 3 agents may be tried together in some cases when no combination of 2 is effective. A common schedule includes Rauvolfia, 1 tablet at breakfast and bedtime; hydralazine, 50 mg., after working up slowly, four times a day; veratrum, 3 mg. at breakfast and bedtime, 2 mg. at lunch and supper.

Individual cases may respond to one combination of 2 drugs but not to another. A drop in blood pressure may frequently be observed when continuing the same dosage longer, when increasing the amount moderately, or when changing medication to include a different drug.

No patient with good renal function is considered impossible to treat medically until so proved. When uremia supervenes, the outlook for favorable effect is poor, although symptomatic improvement may follow the use of Rauvolfia.

Reproduction of the symptoms by induced overbreathing is important when hyperventilation syndrome is likely.

The Hyperventilation Syndrome

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CONTRARY to prevalent opinion, the hyperventilation syndrome is relatively common and may have a chronic, fluctuating course with atypical manifestations. Peripheral paresthesia is the most consistent symptom and disordered breathing the most common sign, although these are seldom prominent, states Bernard I. Lewis, M.D.

The acute form of the syndrome is spectacular and easily recognized by the gross hyperpnea and frank tetany. When chronic patterns develop, diagnosis is more difficult since symptoms infrequently linked with this complex become more noticeable. Therefore a high index of suspicion is required to detect important diagnostic clues.

The frequent manifestations of prolonged overbreathing may be grouped as central neurovascular, peripheral neurovascular, muscular, respiratory, cardiac, gastrointestinal, psychic, and general.

Regardless of the basic mechanism, sustained overbreathing is the primary link in the pathophysiologic chain of events. Widespread neurovascular, neuromuscular, and biochemical changes are induced by the resultant respiratory alkalosis.

Lowered arterial carbon-dioxide content reduces cerebral blood flow and decreases oxyhemoglobin dissociation, resulting in relative cerebral anoxia. The electroencephalographic frequency of the brain waves slows and is closely correlated with the alterations in the level of consciousness. Faintness, dizziness, and blackout spells serve a protective function by stopping the overbreathing and so preventing tetany.

Peripheral and perioral paresthesias are not of central origin but result from the local neurovascular changes. Muscular manifestations probably arise from alterations affecting the myoneural junction; blood calcium level is not particularly significant. The peripheral features are occasionally asymmetric and even unilateral.

Respiratory alterations vary from frequent sighing and yawning to gross hyperpnea. Breathlessness and chest tightness are frequent secondary effects but the patient is often unaware of disordered breathing because of prominent symptoms elsewhere. The result may therefore be quite confusing.

Cardiac symptoms such as palpitations, tachycardia, skipped beats, and atypical chest pain are common and are often the patient's

The hyperventilation syndrome. Ann. Int. Med. 38:918-927, 1953.

chief complaints. The chest pain is described as a dull, aching pressure over the lower anterior thorax. The ST segments and T waves of electrocardiograms may be altered.

Gastrointestinal disorders are seldom as prominent as those referable to the cardiovascular system. Oral dryness is usually pronounced. Bloating, belching, and flatulence are typical and result from the aerophagia that commonly attends the syndrome.

Although the etiology is not always psychogenic, emotional manifestations are almost always evident. Diagnosis is more difficult when organic disease and psychogenic hyperventilation coexist. General complaints such as weakness, ease of fatigue, and exhaustion are explained by the effort of chronic hyperpnea and the energy that is consumed by the psychic disturbance.

Exacerbations tend to occur at rest, particularly when the subject is falling asleep or awakening. Some patients correlate the episodes with exertion, but in such cases the attacks are found to arise after, not during, effort. Patients with organic hyperpnea tend to have recurring, acute hyperventilation attacks, whereas those with secondary psychogenic hyperventilation generally have more chronic conditions.

When a hyperventilation mechanism is suspected, successful reproduction of the symptom complex with induced overbreathing and termination of the attack by rebreathing from a paper bag is of diagnostic and therapeutic value. The procedure is impressive and reassuring to the patient, and the accompanying emotional catharsis provides considerable relief as well as strengthening the doctor-patient relationship.

The reality and the psychophysiologic basis of the symptoms are demonstrated and the stage is set for a therapeutic program. Concurrent organic disease demands attention; psychotherapy is the basic requisite for the psychogenic manifestations.

¶ MALIGNANT NEOPLASMS may be more bearable in the terminal stage if the patient is given cortisone or ACTH. Since alleviation of pain and mental depression is of primary concern, Adolph P. Raab, M.D., and Alexander Gerber, M.D., of the Jewish Hospital and the Jewish Sanitarium and Hospital for Chronic Diseases, Brooklyn, give the drugs despite accompanying diabetes, hypertension, or disturbed psyche. The initial dose of the cortical hormone is 300 mg. orally, followed by 200 mg. the second day and 100 mg. daily thereafter. If vomiting persists, this medicament, or adrenocorticotropic substance, is injected intramuscularly. With this therapy some patients have a sense of well-being and self-confidence and are able to continue a nearly normal existence for many months.

New York J. Med. 53:1333-1334, 1953.

By altering the host reaction to injury trypsin causes inflammation to subside, accelerating healing.

Parenteral Use of Trypsin

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THE intravenous administration of trypsin to patients with acute inflammatory reactions may result in prompt subsidence of the signs and symptoms associated with the inflammation. Irving Innerfield, M.D., Alfred Angrist, M.D., and Alfred Schwarz, M.D., who describe the parenteral use of trypsin in 538 cases, find that the enzyme rapidly suppresses acute inflammation of bacterial, viral, allergic, or chemical origin.

The material is prepared by dissolving, under sterile conditions, a 10-mg. vial of trypsin in 3 cc. of normal saline. This solution is then added to 100 cc. of isotonic sodium chloride together with 1 cc. (10 mg.) of methapyrilene hydrochloride (Histadyl). Since approximately half the proteolytic action of trypsin in solution is lost in three hours, intravenous injection is started immediately after preparation.

A typical course of therapy consists of 10 mg. of trypsin per infusion, given twice daily for five to seven consecutive days. To avoid untoward reactions the rate of administration should not exceed 30 drops per minute. Intravenous trypsin tends to increase the prothrombin time moderately and slightly increase the coagulation time. In the patients studied, no significant deviations from normal were seen in the fibrinogen level, antithrombin titer, factor 5 level, agglutination, or Coombs' reaction.

The cardinal indication for trypsin is acute inflammation regardless of etiology. Trypsin alters the host reaction to injury by activating a number of naturally occurring proteolytic enzymes taking part in determining rate of subsidence of inflammatory reactions and processes.

Factors involved in the augmented reaction initiated by trypsin include [1] enhanced surface and intravascular phagocytosis, [2] increased lysis of liquefied bacteria, [3] decreased viscosity of all tissue fluids, [4] lysis of intralymphatic thrombi, [5] dissolution of fibrin barriers in areas of acute inflammation, [6] liquefaction of capillary thrombi consisting of leukocytes and platelet masses, and [7] amelioration of metabolic defects in areas of acute inflammation, such as elevation of the hydrogen ion concentration and inhibition of anaerobic glycolysis.

Best results from trypsin therapy

Parenteral administration of trypsin. J.A.M.A. 152:597-605, 1953.

are seen in cases of thrombophlebitis, the most striking response being in postpartum thrombophlebitis. Subsidence of pain, edema, local heat, fever, leukocytosis, Homan's sign, and fall in sedimentation rate occur in the first few hours after therapy.

Prompt and significant improvement is observed with ischemic purulent leg ulcers. Diabetic gangrene, if not too extensive, and infected diabetic ulcers respond well to trypsin therapy.

Patients with thrombosis of the central retinal vein of recent onset may have dramatic and prompt improvement, as noted by restoration of vision, daily improvement in visual fields, blood coursing through the retinal vessels when orbital pressure is exerted, subsidence of retinal edematous changes, and diminution of retinal exudates.

After a few intravenous infusions, acute rheumatoid arthritis patients may be greatly benefited, with diminution of pain and swelling, increase in joint mobility and functional capacity, and a strong sense of well-being.

Results in coronary occlusion are incomplete but encouraging.

Side effects of trypsin therapy include transient facial flushing, a sense of warmth, and, occasionally, endophlebitis.

Intravenous trypsin should not be given to patients with hepatic insufficiency, congestive heart failure, cachexia, hemorrhagic tendencies, or conditions associated with necrosis of vital tissues and severe anoxia, as in advanced pulmonary emphysema and pulmonary fibrosis. Greatly depressed prothrombin inhibitor levels are absolute contraindications to trypsin infusions.

Seating the Patient at Ease

ABRAHAM G. WHITE, M.D.

THE way patients sit in the consultation room may influence the ability to give an adequate history to the physician. Patients are less apt to be at ease when the desk is a barrier between doctor and patient.

Abraham G. White, M.D., of Mount Sinai Hospital, New York City, notes that after entering the consultation room a patient usually follows one of the following patterns: [1] sits down and immediately leans back, [2] sits on edge of chair, [3] draws chair closer to desk and sits on edge of chair, or [4] draws chair closer to desk, sits on edge of chair, and, leaning forward, rests elbows on desk.

The first way is considered sitting at ease, but, with a desk between doctor and patient, only 10.8% of patients will use this position. Without the desk, 55.4% sit at ease.

The patient sits down. Psychosom. Med. 15:256-257, 1953.

Response of urinary chlorides and changes in weight should alert the physician to the low-salt syndrome.

Salt Depletion in Cardiac Therapy

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A PRACTICAL and simple method is available by which the clinician may recognize the salt depletion syndrome in cardiac patients taking low-salt diets and mercurial diuretics. The procedure depends on the response of the urinary chlorides and the change in body weight after the administration of a test dose of mercurial diuretic.

Although the popularity of low-salt diets and mercurial diuretics for cardiac patients has increased the frequency of the salt depletion syndrome, this complication is not easily recognized. The effects of the syndrome are varied and the onset is insidious so that the symptoms are readily misinterpreted, points out Jacob J. Silverman, M.D. Symptoms include a drowsiness and apathy which may be falsely attributed to sedation or neurosis. Anorexia, nausea, and vomiting may further decrease the salt intake.

The diuresis from mercurials usually produces profuse excretion of chlorides and loss of body weight. If urinary chlorides decrease and a prompt gain or no loss of body weight occurs, the low-salt syndrome should be suspected.

Before the administration of the test, the patient is weighed and a sample of urine obtained. The diet remains unchanged and fluids are encouraged. To test for urinary chlorides, 1 cc. of a standard mercurial diuretic is given intramuscularly. All urine passed is collected for eight or four hours.

Then 1 drop of 10% potassium chromate solution is put in a test tube containing 10 drops of urine. To this mixture, 0.73% silver nitrate solution is added drop by drop until the color changes to a permanent reddish brown. The drops are counted, each drop representing 150 mg. of chloride per liter of urine.

The healthy person demonstrates over 3 gm. of chloride per liter; a patient with salt depletion may show a chloride content as low as 150 mg., 1 drop, at the start of the test and little change after completion. Some patients with the salt depletion syndrome have practically no diuresis or loss of weight; paradoxically a gain in weight may occur.

The test does not indicate sodium or potassium losses, and is also unreliable in the nephrotic syndrome, some organic nephropathies, Addison's disease, and after a major operation.

A simple method for detecting the salt depletion syndrome during cardiac therapy. Postgrad. Med. 13:547-551, 1953.

A plan of management is outlined for the various forms of pulmonary cyst.

Cystic Diseases of the Lung

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INFECTION, bronchospasm, and impaired ventilation are problems in management of cystic lung disease. When the lesion is sufficiently localized, surgical excision is recommended by Francis M. Woods, M.D.

CLASSIFICATION

Cystic diseases of the lung include a group of abnormalities of air- or fluid-containing spaces not caused by lung destruction. At one extreme is the bronchogenic cyst and at the other is pure emphysema.

Simple bronchogenic cyst with bronchial epithelial lining is congenital and usually has one or more large bronchial communications. Simple cysts may also be gastric, intestinal, or dermoid, depending upon the type of the lining membrane.

Distended alveoli may rupture and create a subpleural sac called a *bleb;* when the distended alveolus or group of alveoli is deeper within the parenchyma, the term *bulla* is used. Blebs and bullae are often segmental or lobar when the rest of the lung is normal.

A *pneumatocele* is not a true cyst but is the accumulation of air by rupture into the lung parenchyma as a result of trauma or lung infection.

In *emphysema* all the alveoli have become diffusely dilated and have lost elasticity. The condition is apparently degenerative.

SYMPTOMS

The symptoms of cystic disease are those resulting from [1] impaired pulmonary ventilation, [2] infection, and [3] bronchial spasm.

Cysts impair ventilation by replacing and compressing normal lung. Dyspnea will result and is apt to be especially labored in emphysematous cases. Superimposed bronchitis and pneumonitis often precipitate the most severe episodes by decreasing air flow through the bronchi and by edema of the alveoli.

Grossly infected cystic spaces act like lung abscesses. Cough, purulent sputum, possible bleeding, fever, and toxicity result. These conditions may be acute, recurrent, or chronic. The smooth, rounded roentgen appearance usually distinguishes the infected cyst from an abscess. Patients with bullae, blebs, or emphysema are less likely to have infected cystic spaces but have the constant cough of chronic bronchitis.

Cystic diseases of the lung. J. Internat. Coll. Surgeons 19:568-575, 1953.

Bronchial spasm is frequently associated with lung cysts, but the wheeze of frank asthma is not usual. Spasm rarely is of any significance among the simple cysts but is prominent with simple emphysema.

TREATMENT

Acute infections are combated with rest, antibiotics, and, when needed, postural and bronchoscopic drainage. Chronic bronchial infection must be treated symptomatically with cough medications and expectorants. All possible irritants in the inhaled air, especially cigaret smoke, must be removed.

An infected cyst need rarely be drained, for, if acute, excision should be done to prevent recurrence. Because of potential infection and increase in size and because of the difficulty of radiologic distinction from rounded tumor masses, most simple cysts should be removed even if asymptomatic. Multiple cysts are excised if sufficiently localized. Nonfunctioning tissue is thus removed and the function of compressed normal tissue is improved.

Combinations of ephedrine, aminophylline, and phenobarbital administered by mouth are useful measures to combat bronchospasm. Nebulized epinephrine and similar substances may be administered with oxygen. By increasing the diameter of the bronchial system, these drugs may improve impaired ventilation.

Increase in oxygen content of inspired air by intermittent administration of oxygen via mask is not often needed except in diffuse forms of cystic disease. Positive pressure to the oxygen supply during inspiration is useful, particularly for emphysema.

Impaired ventilation may also be improved by voluntary exercises to increase the excursion of the chest wall and diaphragm. Belts that hold the abdomen and the diaphragm high as well as pneumoperitoneum will help some patients by starting inspiration with the diaphragm in a higher position. Correction of obesity mechanically decreases the burden on the entire cardiorespiratory system.

Spontaneous pneumothorax often occurs in cystic disease because of rupture of superficial blebs or cysts. The pleura should be immediately emptied of air by a needle. In most instances no other measures are necessary. In many patients, the point of leak will seal spontaneously, and recovery is by the slow absorption of air.

If air shows signs of reaccumulation, an intercostal tube is placed into the pleura and air is continuously evacuated. When the lung has been in constant contact with the chest wall for forty-eight hours, the tube can be removed and the patient restored to activity. If air continues to leak, the point of leakage must be found and tied off. If the leak is not found, the visceral and parietal pleura should be slightly irritated by wiping with gauze in order to produce adhesion of the lung to the chest wall. Thus, by this procedure, any possible reaccumulation of air in the pleura is prevented.

Data on deep veins in chronic insufficiency are gained by ascending phlebography with the patient erect.

Ascending Erect Phlebography

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FOR treatment of chronic venous insufficiency, adequate knowledge is essential concerning the status of the deep, communicating, and superficial venous systems. The patency of the venous channels and the competence of the valves must be known.

To obtain this information, E. M. Colvin, M.D., J. Frank Walker, M.D., and Horace D. Smith, M.D., find that ascending phlebography performed with the patient erect is of considerable value. Other venographic technics generally fail to give good visualization of the deep venous system because of incomplete filling and do not test the antigravity or functional mechanism of the valves since the individual is kept in the horizontal or Trendelenburg position.

Although not necessary or justified in the usual case of varicose veins of the extremity, ascending erect phlebography is indicated for patients with definite deep thrombophlebitis or when the status of the deep venous system is doubtful. The method is useful when complete or incomplete deep venous obstruction may be the cause of varicosities and is frequently helpful for varicose veins that have been unsuccessfully treated.

The patient, placed on an x-ray table elevated to an angle of 75 to 80°, stands on the foot rest with the leg to be studied in the midportion of the table. The leg is rotated internally 25 degrees to decrease superimposition of bony and vascular structures. A tourniquet is placed just above the ankle sufficiently tightly to obstruct the superficial venous system.

A 20-gauge needle is then inserted into a vein on the dorsum of the foot and is held in place with adhesive tape. The needle is connected by a short piece of rubber or plastic tubing to a syringe containing 25 to 30 cc. of 35% iodopyracet. The contrast medium is injected rapidly, but not forcibly, over a period of five to ten seconds.

Ascending erect phlebography. Arch. Surg. 66:292-300, 1953.

Roentgenograms are then made of the leg and of the lower thigh and, if indicated, are also made of the entire thigh.

When the capacity of the venous bed appears to be increased by the existing lesion, a greater volume of iodopyracet, 30 to 50 cc., is employed.

This method of phlebography provides satisfactory filling of the deep venous system of the leg and demonstrates the competency of the valves. The abnormal pattern resulting from recanalization of a thrombosed vein is readily detectable. With the tourniquet firmly applied at the ankle, the iodopyracet is directed from the venous network of the dorsum of the foot into the deep veins of the leg, and no contrast medium appears in the superficial veins unless the valves of the perforating veins are incompetent.

Tests for sensitivity to iodopyracet are made before the procedure by the intradermal method and are further checked by injecting 1 cc. of the contrast medium at the beginning of the phlebographic process and waiting a few seconds before completing the injection. Except for transient syncope before the injection of iodopyracet and an occasional slight urticaria afterward, no other reactions to the procedure have been noted.

Failure of Bovine Cartilage Grafts

JOHN F. NORTH, M.B.

BECAUSE of a tendency to late absorption, bovine cartilage should not be used in contour-restoring plastic surgery. Among 141 initially successful solid grafts with this material, John F. North, M.B., of the Nuffield Department of Plastic Surgery, Oxford, England, found that 32, or 23%, showed some evidence of absorption within one year. A degree of absorption was noted in 83, or 59%, of the grafts within four and one-half years, usually by the end of the second year.

Histologic evidence indicates that the absorption process may be underway in many grafts showing no clinical signs of absorption at the time. Susceptibility to minor trauma appears to influence the occurrence of late absorption.

Absorption is most likely to occur in reconstructed ears and is especially rapid with children; failure is least common in cranial defects. Late changes are more frequent under a flap than beneath healthy skin. Thus absorption is more often seen when bovine cartilage is used to reconstruct noses than to build out a nasal depression covered by normal skin.

The use of preserved bovine cartilage in plastic surgery. Plast. & Reconstruct. Surg. 11:261-274, 1953.

Infection of tissues weakened by vascular insufficiency adds to risk of thrombosis and reflex vasospasm.

Infection in Obliterative Artery Disease

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WILLIAM C. WIGGLESWORTH, M.D.
Boston University and Massachusetts Memorial Hospital, Boston

TOPICAL application of antibiotics is an important adjunct in treatment of infections associated with obliterative arterial disease.

Infections are likely with this condition despite systemic use of antibiotics, mainly because sufficient concentration of the drug does not reach the involved region.

Once infection is superimposed upon tissues compromised by vascular insufficiency, further destruction occurs, increasing the chances for thrombosis and reflex vasospasm, state Chester W. Howe, M.D., and William C. Wigglesworth, M.D.

Antibiotics are not effective in the presence of necrotic tissue, the removal of which is a prime requisite to successful therapy. Treatment should be instituted before infection advances into inaccessible tissue planes where proper debridement can be accomplished only by amputation.

Topical antibiotics are applied as follows:

Surgical masks and sterile gloves and drapes are worn during all dressings. If large painful areas require debridement, general anesthesia is used.

A layer of gauze is placed near the clean debrided lesion, trimmed to fit the geographic pattern, and disposed to act as a wick to carry the medication into all crevices. Bulky gauze dressings will soak up the antibiotic solution and prevent good concentration in the wound. The thin, accurately placed gauze is easily saturated with small amounts of solution, which is fed in through one or more small rubber catheters. Since slight pressure from the outside bandage on a rubber catheter may groove the skin and start new ulceration, a generous thickness of petrolatum gauze is placed beneath each catheter for protection (Fig. 1).

A sheet of well-lubricated petrolatum gauze is placed over the whole area (Fig. 2). This keeps the catheter in place, makes the dressing waterproof, and prevents evaporation of the solution. Another more bulky layer of gauze is placed outside the petrolatum strips and covered with sterile rubber sheeting or plastic material.

The catheters emerge through a final outside layer of loosely applied bandage which serves to hold the rubber sheet in place. Sterile

Control of infections associated with obliterative arterial disease. Surg., Gynec. & Obst. 96:553-563, 1953.

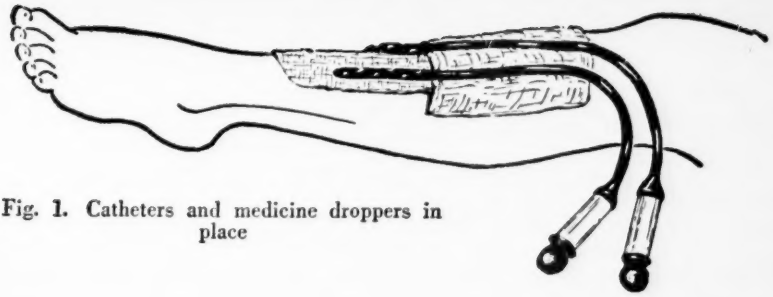


Fig. 1. Catheters and medicine droppers in place

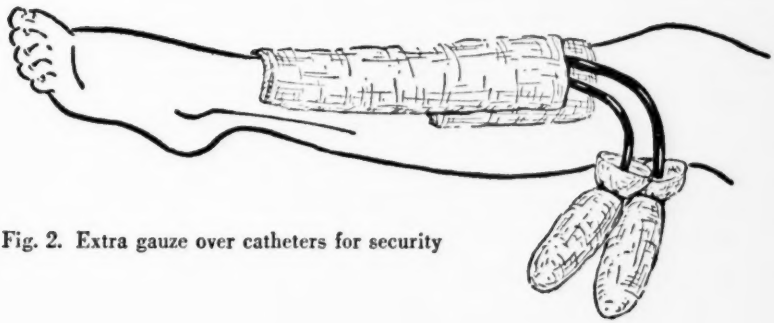


Fig. 2. Extra gauze over catheters for security

medicine droppers are inserted into the open ends of the catheters. Solutions are injected with a needle and syringe by puncturing the sterilized rubber bulb of the medicine dropper, which is covered with sterile gauze between injections.

To keep the wound wet and in constant contact with a fresh supply of solution, 2 to 4 cc. of solution is inserted into each catheter every four to six hours, depending on the size of the lesion.

Dressings are left in place four to six days, when greatest effect of therapy is usually accomplished.

The antibiotic solution is determined by culture and sensitivity methods. If infection is not controlled at the end of four to six days, repeat testing is done. If further necrosis develops, another debridement is required.

Meticulous care in preparing the wound and dressing is fully as important as the antibacterial effect of the medication.

Chemotherapy is of no value, however, in the control of local disease with advanced infections of the feet when the vascular component is predominant and if the following requisites for topical therapy cannot be met: [1] absence of necrotic tissue, [2] susceptibility of organisms to the antibacterial agent, [3] adequate constant contact between site of infection and drug, and [4] prevention of recontamination with resistant organisms.

Before removal of a salivary gland tumor, the facial nerve must be carefully isolated and exposed.

Mixed Tumors of Salivary Glands

SAMUEL F. MARSHALL, M.D., AND R. ARMOUR FORSE, M.D.
Lahey Clinic, Boston

EARLY operation is needed for mixed tumors of the salivary glands, since carcinomatous changes develop in about 13%. The objective is complete surgical excision of the tumor without injury to the facial nerve or formation of a salivary fistula.

The facial nerve should be isolated and exposed before the tumor is removed, explain Samuel F. Marshall, M.D., and R. Armour Forse, M.D. Dissection of the nerve is unnecessary if the tumor is small and peripherally located, but should always be done if the tumor is large or deeply situated.

Inhalation anesthesia by endotracheal intubation aids maintenance of oxygenation and anesthetic level, permits proper draping, and gives the surgeon and 2 assistants access to the field without interfering with the anesthetist. A cotton plug is placed in the external auditory meatus to prevent entrance and subsequent difficulty in removing dried spilled blood.

The parotid tumor is exposed by a vertical incision anterior to the tragus of the ear, by division of the skin and subcutaneous tissue, and by the dissection of a flap anteriorly.

A small tumor protruding from the gland is safely dissected with some adjacent grossly normal gland.

The incision is enlarged when cancer is a possibility, when facial nerve injury is feared, or when the tumor projects medially and deeply into the gland. Enlargement involves prolonging the opening inferiorly over the posterior border of the mandibular angle and anteriorly below the inferior border of the mandible, with the 2 incisions joining directly beneath the pinna of the ear.

The ear is elevated by dissecting the subcutaneous tissue and overlying skin superiorly. When the tumor is fixed to overlying skin, the incision is easily modified so that the skin is excised with the tumor. Depending on the circumstances, a skin flap containing little or no subcutaneous tissue is then elevated anteriorly from the surface of the parotid gland and retromandibular area. This may be carried anteriorly well beyond the parotid gland without fear of slough when closed.

When large tumors block access to the stylomastoid foramen, the tumor can be dislodged anteriorly. When the facial nerve is isolated, dissection is continued anteriorly, preserving the nerve, with the gross

Mixed tumors of the salivary glands. S. Clin. North America 33:655-669, 1953.

tumor mass kept in view at all times.

The operation may be altered to extensive subtotal removal of the gland or complete ablation, including the portion that protrudes retropharyngeally and lies medial to the nerve. Except for this tongue-like projection, little of the parotid is traversed by excision of the bulk of the gland. The facial nerve lies upon the lateral surface of the masseter muscle after passing through 2 cm. or less of the gland. A stimulating electrode, such as used by neurosurgeons, should always be employed to aid in identifying the branches of the nerve.

If lymph nodes directly below the tumor or elsewhere in the neck have metastases, radical neck dissection is performed in continuity with the field of the primary tumor.

A drain is usually not required if a pressure dressing with Elastoplast is applied around the entire ear. The ear should be padded to avoid pressure chondritis. After extensive subtotal parotidectomy or complete ablation of the gland, a Penrose drain or T tube with Wangensteen suction should be left in place for three or four days to aid drainage of secretions and facilitate wound healing.

¶ DIFFERENTIATION OF LUNG CANCER and infection may be facilitated by consideration of the absolute eosinophil count, believes Roger C. Murray, M.D., of the Mary Hitchcock Memorial Hospital, Hanover, N. H. About 3.3% of patients with pulmonary carcinoma have white cell counts exceeding 30,000. In such cases, the eosinophil count may be of help in establishing diagnosis. In 5 of 18 cases of lung cancer, the roentgenographic shadows simulated lung abscesses but an eosinophilia of more than 500 was associated with the leukocytosis. In similar observations in 6 cases of lung abscess, eosinophilia was not found associated with the leukocytosis. The toxic effects of a necrotic neoplasm probably induce proliferation of all leukocytic elements.

New England J. Med. 248:848-850, 1953.

¶ DIVERTICULITIS of the ascending colon can usually be diagnosed preoperatively by roentgenography after careful administration of a barium enema. As differentiation from acute appendicitis may be difficult, Arkell M. Vaughn, M.D., and Eugene M. Narsete, M.D., of Mercy Hospital and Loyola University, Chicago, believe that the treatment is surgical, varying from simple drainage to right hemicolectomy. This disease appears more commonly in females than in males and somewhat more frequently among younger persons, whereas cecal diverticula are present equally often in older patients of both sexes.

Arch. Surg. 66:339-343, 1953.

Scarring is decreased after breast removal when the upper incision is below, not above the axilla.

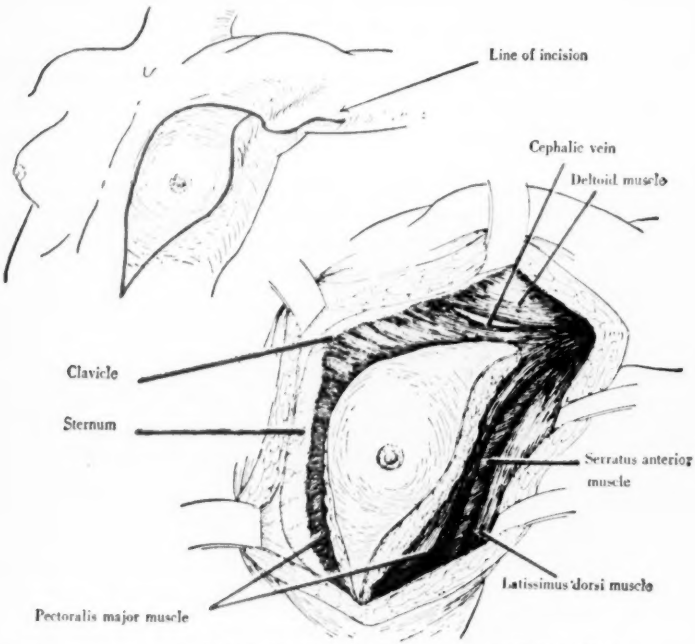
Subaxillary Incision for Mastectomy

WILLIAM F. MAC FEE, M.D.
Cornell University, New York City

A MORE acceptable scar for the woman who has the misfortune to lose her breast is provided by the subaxillary incision.

The incision when completed is an ellipse encompassing the breast, with the upper angle curved posteriorly across the lower axilla and extended along the posteromedial aspect of the arm (see illustration).

The medial portion of the incision is outlined first and is begun near the tip of the xyphoid cartilage and carried upward along the medial border of the breast to the level of the inferior boundary of the axilla. The incision is then directed transversely backward across the lower border of the axilla, slightly below the axillary hair line



A subaxillary incision for radical mastectomy. Ann. Surg. 137:850-855, 1953.

and extended along the posteromedial aspect of the arm 5 to 8 cm.

The lateral incision is first carried laterally and upward, then in a slightly medial direction to include the breast, states William F. MacFee, M.D. The skin margins are undercut as usual.

The principal advantages are:

The scar is placed in a relatively concealed position.

The incision permits complete exposure of the operative field and imposes no restrictions on the extent of the operation.

Closure of the wound is not more difficult than with other incisions of comparable extent.

Little or no subsequent swelling of the arm occurs.

Sloughing of the skin edges is uncommon.

Disadvantages of the incision are that elevation of the axillary flap is slightly more difficult and that the medial flap is wider so that dissection beneath is more complicated. Dissection under the lateral flap, however, is facilitated by the subaxillary incision.

Intrathoracic Biopsy Technics

CLIFFORD F. STOREY, M.D., AND
BENEDICT M. REYNOLDS, M.D.

ACCURATE histologic diagnosis is necessary before therapy of intrathoracic lesions is started.

Bronchoscopic and esophagoscopic biopsies are well-known and valuable methods for establishing diagnosis. However, 3 other highly useful but little utilized biopsy technics are available for the study of intrathoracic disease: [1] resection of the deep cervical fat pad and nodes, [2] mediastinal biopsy at open thoracotomy, and [3] lung biopsy through an open thoracotomy. These methods merit more widespread use in the investigation of chest lesions posing difficult diagnostic problems, believe Capt. Clifford F. Storey, M.C., of the U. S. Naval Hospital, St. Albans, N. Y., and Benedict M. Reynolds, M.D., of New York University–Bellevue Medical Center, New York City.

Resection of the deep cervical fat pad and the contained nodes is the simplest of the 3 procedures and is the best withstood by even poor-risk patients. Local anesthesia is used; the operation requires only a few minutes, causes little or no discomfort, and entails no morbidity.

Thoracotomy for either mediastinal or lung biopsy can be done rapidly and with little morbidity. The exact information obtained may prevent futile long-term therapy, alter the prognosis, or demonstrate the need for specific treatment.

Biopsy techniques in the diagnosis of intrathoracic lesions. Dis. of Chest 23:357-382, 1953.

Use of foam rubber instead of clamps is particularly desirable for intestinal surgery in children.

Anastomosis Without Clamps

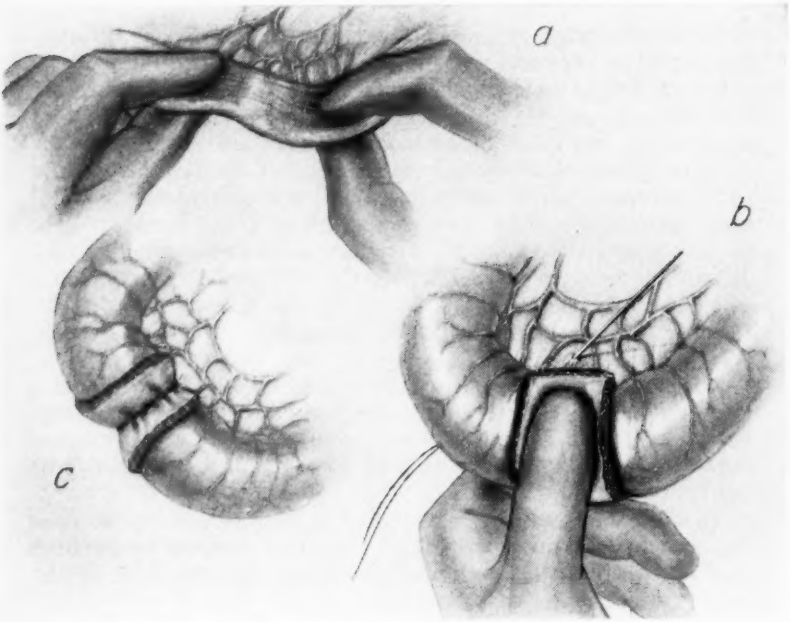
HARRY BERMAN, M.D.
Brooklyn

FRANK S. MAINELLA, M.D.
Unity Hospital, Brooklyn

FOAM rubber may be used in place of cumbersome clamps in performing intestinal anastomosis. The method devised by Harry Berman, M.D., and Frank S. Mainella, M.D., is particularly applicable for surgery on small bowels, especially in children.

The use of clamps in intestinal anastomosis has many drawbacks. Rubber shod clamps often injure the bowel, particularly when the rubber is firm or has lost porousness during sterilization.

To avoid damage to the blood vessels at the mesenteric border



Method of intestinal anastomosis without the use of clamps. Ann. Surg. 137:548-550, 1953.

during lateral anastomosis, clamps must be placed in the middle of the lumen of the bowel; this permits little room in which to do the anastomosis. Thus the sutures are put under tension and leakage is likely, especially at the corners. When the mucosa is opened, the bowel is never completely empty and the contents must be wiped away, increasing the likelihood of contamination. For end-to-end anastomosis, the clamps are cumbersome when applied.

By the following method, clamps are eliminated:

A foam rubber sponge is sterilized and cut on the operating room table to fit the circumference of the bowel. Usually a piece 3 by 1 by ½ in. is used for small intestines. For a large intestine, a 4-in. strip is necessary.

The bowel is milked clean of contents (Fig. *a*), and the foam rubber block is fitted around the bowel tightly with the thumb and index finger. An assistant runs a needle through a bloodless area at the mesenteric border (Fig. *b*) and ties the foam rubber snugly enough over the bowel (Fig. *c*) to prevent escape of contents. The same technic is performed at the opposite end of the bowel.

For lateral anastomosis, the diseased bowel is removed as usual, the mesenteric vessels are tied off, and the ends closed. The bowel is milked and the foam rubber is applied at a comfortable distance from the anastomosis to prevent leakage. Anastomosis is begun with the aid of Allis clamps.

When performing ileostomy, the bowel is milked, the foam rubber is applied as far apart as necessary, and the tube is inserted for as long a distance as desired without fear of contamination or kinking.

Resection of the large bowel, particularly the sigmoid, can be performed with comfort in a perfectly clean field without danger of contamination. When the first row of sutures is completed, the foam rubber is removed and the anastomosis is continued.

¶ LUPUS ERYTHEMATOSUS of all types may respond to intramuscular injections of cyanocobalamin (vitamin B_{12}) despite failure of previous therapy. While intramuscular injection of 15 μg. of vitamin B_{12} weekly effectively heals discoid lesions, Samuel Goldblatt, M.D., of Cincinnati finds that 100 μg. daily or three times weekly speeds recovery. For acute dissemination or severe and extensive recurrences, doses of 100 to 1,000 μg. are given daily for one to two weeks. In all phases of the disease, maintenance amounts are continued for several months after dermal clearing is complete and preferably until the sense of vibration and blood elements are restored. Fatigability and diminished sensibility to vibrations are rapidly relieved; secondary anemia is corrected more slowly. Restitution of the integument occurs without atrophy or scarring.

Acta dermat.-venereol. 33:216-235, 1953.

Sclerotic brain lesions caused by temporal lobe herniation at birth may ripen into epileptogenic foci.

Birth Injury and Seizures

K. M. EARLE, M.D.
University of Texas, Galveston

M. BALDWIN, M.D.
University of Colorado, Denver

WILDER PENFIELD, M.D.
McGill University, Montreal

COMPRESSION or anoxia of the brain during birth or infancy is probably the cause of approximately 63% of cases of seizures originating in the temporal lobe. Patients with such seizures constitute a large proportion of all epileptics, point out K. M. Earle, M.D., M. Baldwin, M.D., and Wilder Penfield, M.D.

Epileptogenic discharge in various parts of the cortex produces a variety of auras, such as abdominal, cephalic, and olfactory sensations; psychic hallucinations or dream states; illusions of perception—déjà vu phenomena; and automatism. The convulsions may begin in childhood and continue into adult life or may not appear until the second or third decade.

Roentgenograms often will show asymmetry of the skull with relative smallness of the temporal fossa and elevation of the petrous ridge on the side of the atrophic temporal lobe. Pneumoencephalograms may demonstrate slight comparative enlargement of the temporal horn of the lateral ventricle of the affected side. The electroencephalogram reveals abnormal potentials in the affected temporal area. At operation, areas shown to be abnormal by electrocorticogram often reproduce the patient's initial aura when stimulated.

The gross appearance of the brain varies from atrophy or toughness of a single gyrus to atrophy of the entire temporal lobe and parts of adjacent cortex. The commonest abnormality consists of sclerotic areas in the inferior and medial part of the temporal lobe, usually involving uncus, hippocampal gyrus, and part of the first temporal gyrus. Such an abnormality can be produced by pressure on the newborn baby's head, especially if the child is premature. The resulting herniation of the hippocampal regions through the incisura of the tentorium produces both direct brain injury and indirect anoxic damage by compressing blood vessels. This herniation is usually not seen post mortem.

Incisural sclerosis and temporal lobe seizures produced by hippocampal herniation at birth. Arch. Neurol. & Psychiat. 69:27-42, 1953.

The merits of the low cervical vs. classical cesarean section have been tested in a quarter-century experiment.

Comparison of Cesarean Sections

FREDERICK H. FALLS, M.D.
University of Illinois, Chicago

NO significant difference is found in the results after low cervical and classical cesarean operations when done by an experienced obstetrician under the same conditions.

To evaluate the two procedures, Frederick H. Falls, M.D., has, for the past twenty-six years, alternated between a low cervical cesarean section and a classical operation without respect to the indications or conditions of either the mothers or babies.

The same types of assistants have been used and the same operating conditions. Some alterations have occasionally been made in the kind and mode of anesthesia, but both types of operation are affected equally by such changes. The average age of the patients is the same for both groups, with a similar number of primiparas and instances of toxemia.

LOW CERVICAL

For the low cervical cesarean section, a transverse incision is made in the uterovesical fold at the uterine attachment, and the peritoneum and bladder are pushed downward. A lap pad is placed above the line of incision to catch the spill. Obstetric Pituitrin, 1 cc., is injected into the uterine muscle just before the uterus is incised.

A longitudinal incision, 12 to 14 cm., extending upward from the cervix, is made in the lower uterine segment. The infant is delivered with forceps. The wound edges are grasped with Allis forceps at bleeding points. The placenta and membranes are then gently peeled away and delivered.

The uterine incision is closed with 2 layers of continuous chromic catgut. The peritoneum of the uterovesical fold is sutured back into original position, covering the incision.

CLASSICAL

The upper abdomen is also partially packed off with a lap pad in the classical section. After 1 cc. of pituitary extract is injected, a 12- to 14-cm. uterine incision is started about 2 in. above the umbilical level and is then carried downward.

The baby is delivered by breech extraction, and the placenta is manually removed. The uterine wall is closed by 3 running catgut sutures, the upper always interdigitating with the lower. The peritoneum is

A comparison of the low cervical and classical cesarean section operations. Am. J. Obst. & Gynec. 65:707-719, 1953.

closed over the suture line with fine plain catgut.

COMPARISON

In the total 500 alternating sections done during the twenty-six-year period, 7 maternal deaths have occurred, 5 after classical section and 2 after low cervical section. Normal postoperative uteruses were noted in all except 1 case. In the 6 other cases, the pathologic conditions found were probably incompatible with recovery regardless of the type of delivery. Shock, hemorrhage, anesthesia, or puerperal infection spreading from the operative site is not considered the cause of death in either series.

The operations are equally difficult, consuming usually about thirty-eight minutes. Total number of days in the hospital is alike for the 2 operations, as well as days when the patient's temperature is above 100° F. Slight wound infections are similar in number.

Postoperative pain and paralytic ileus are no greater after classical section, since both groups receive approximately the same amount of analgesia and the same number of postoperative enemas. Urinary function is apparently no more affected after low cervical section, because the number of necessary postoperative catheterizations is about the same in each series.

No significant difference appears in the number of stillborn infants or the number of deaths for prematures.

A few patients in each group return for subsequent uneventful delivery. Repeat sections are performed in a similar number in each classification and the abdominal adhesions are found to be about the same.

A ruptured uterus occurred in a patient not in labor. The patient was about thirty weeks pregnant and had had a classical cesarean operation.

¶ ESTROGENIC EFFECTS are obtained in the treatment of the climacteric with small amounts of the long-acting synthetic compound, chlorotrianisene (TACE). When oral doses of 6 mg. daily were given for three weeks to 11 of 23 postmenopausal patients aged 70 to 90 years, Ralph C. Benson, M.D., and Jane W. Garetz of the University of California, San Francisco, observed cornification of the vaginal epithelium, improvement in the sense of well-being, and amelioration of symptoms of atrophic vaginitis-cystitis. Of the other 12 patients, 7 received larger amounts of TACE, and 5 were given 0.5 mg. of diethylstilbestrol daily. Daily administration of more than 18 mg. of TACE was found to be necessary for prolongation of action. Withdrawal bleeding occurred in 3 of the 11 subjects given 6 mg. a day and 3 of the 5 receiving 12 mg. daily. The 5 patients taking diethylstilbestrol bled vaginally after termination of therapy.

Clin. Endocrinol. & Metab. 13:258-262, 1953.

Continuous conduction anesthesia throughout parturition is achieved by bilateral paravertebral block.

Sympathetic Nerve Block for Labor

ARTHUR M. REICH, M.D.
New York University, New York City

A RELATIVELY simple method of lumbar sympathetic injection with pudendal block provides continuous anesthesia from early labor to delivery.

The mother has no pain, tension, or anxiety and remains alert and cooperative. The physiologic mechanism of expulsion is improved, so that birth is unusually rapid, with little blood loss.

The anesthesia is highly selective, therefore safer than spinal technic. Since no sedation is given, the child's vital functions are not depressed. Among 800 deliveries aided by paravertebral injection, no maternal fatalities occurred, only 4 infants were stillborn, and 1 died after birth.

A special injection unit designed by Arthur M. Reich, M.D., is generally available. The kit includes a pair of 18-gauge needles 4½ in. long, with thin walls, short bevel, and dull edges, a stilet that locks, and plastic tubing for 23- or 24-gauge needles.

Also provided are 2 steel wire 10-in. stilets looped at one end, 3 short-bevel, 23- or 24-gauge, ½- or 1-in. needles, and a 20-cc. Yale syringe. Extra plastic tubing can be obtained in 100-ft. lengths.

The anesthetic drug, Cyclaine Hydrochloride in 1% solution, is less toxic and more lasting than procaine. A dose of 25 cc. is instilled through a needle on each side. If needed, further amounts are introduced by tubing previously inserted through needles and left in place.

Anesthetic activity lasts four to six and a half hours, however, and a second dose is seldom required. Afferent and efferent sympathetic impulses are inhibited only along the anterior lateral external surface of the first or second lumbar vertebra, and no motor paralysis results because the spinal canal or foraminal region is not entered.

Blood pressure and pulse are practically unaltered, and although drowsiness may be felt for a short time, giddiness and other undesirable reactions are not significant.

Bilateral pudendal block with 1% Cyclaine or procaine is done for somatic nerves along the lower birth passage. Timing is important. For primiparas, injection is given at the cervical rim phase or early in the second stage of labor; for multiparas, when the cervix is dilated 4 fingerbreadths.

The obstetrician remains at hand to forestall precipitate delivery, and the preparations may require close

Paravertebral sympathetic block anesthesia in labor. Obst. & Gynec. 1:672-680, 1953.

teamwork. If labor is to be induced by pituitary infusion, preliminary sympathetic nerve block hastens the process.

Paravertebral sympathetic block eliminates all pain from the uterus, cervix, and upper vagina. In addition, circular muscles in the lower uterine segment are apparently relaxed, allowing the cervix to soften and dilate more rapidly.

Constriction rings disappear, and dystocia is often overcome. Uterine contractions become more powerful by actual measurement, and voluntary abdominal muscles are used more efficiently.

When multiparas receive Cyclaine at 1 or 2 fingers' cervical dilatation, approximately 60% complete the first stage of labor in an hour or less, and 67% pass through the second stage in ten minutes at most. With similar treatment, more than half of primiparas require less than three hours for the first stage, and 88% less than an hour for the second stage.

In most cases delivery is spontaneous or assisted by elective perineal forceps. The third and early postpartum stages are practically bloodless, as the empty uterus contracts firmly.

Gynecology in General Practice

EMIL NOVAK, M.D.

THE modern family physician is well equipped to handle minor gynecologic problems and to recognize the cases needing expert care.

Two glaring mistakes must be avoided: failure to detect cancer, and abuse of endocrine therapy, particularly during the menopause.

Doctors now overlook malignant pelvic tumors in no less than 28% of instances. Emil Novak, M.D., of Johns Hopkins University, Baltimore, advises examination about every six months. Since early growth may be extremely difficult to find, biopsy and vaginal smear should be entrusted to a specialist unless the practitioner has special training in the procedure.

Most middle-aged women are better off without hormones of any kind. Menopausal flushes, sweats, and other vasomotor symptoms are easily tolerated, on the whole, and eventually disappear, although the exact time is unpredictable. Nervousness, headache, and irritability with normal menses are more likely the result of domestic or other stresses than of an endocrine disorder.

Intermittent oral estrogen therapy is sometimes advisable for severe menopausal symptoms, but prolonged courses may cause troublesome bleeding or predispose to cancer. The man who gives innumerable injections may be accused of running a profitable racket.

Gynecology in general practice. Maryland M. J. 2:223-226, 1953.

Slow delivery, prompt placental expression, and elevation of uterus will reduce maternal mortality.

The Third Stage of Labor

JOHN E. SAVAGE, M.D.
University of Maryland, Baltimore

PROPER management of the third stage of labor may significantly reduce the amount and incidence of postpartum hemorrhage, a major cause of maternal death.

With a method advocated by John E. Savage, M.D., the average blood loss in 300 deliveries was 140 cc. less than that for 300 patients delivered by more common procedures. The average duration of the third stage of labor was reduced by seven minutes. In the preferred method, slow delivery of the baby is practiced, with detection of placental separation by vaginal touch and use of the Brandt-Andrews management.

The same practices were observed for all 600 patients with respect to analgesia and anesthesia. Demerol and scopolamine were given for analgesia, or analgesia was omitted. Local or saddle block anesthesia was given, if any.

Anatomically, the uterine sinuses are blood spaces lined with endothelium and interspersed through the muscle bundles and layers of the uterus. As the uterus is emptied, the muscle elements contract and retract. The sinuses are thus constricted, and the blood flow is shut off. Profuse bleeding occurs when the sinuses are not properly clamped off by the muscle.

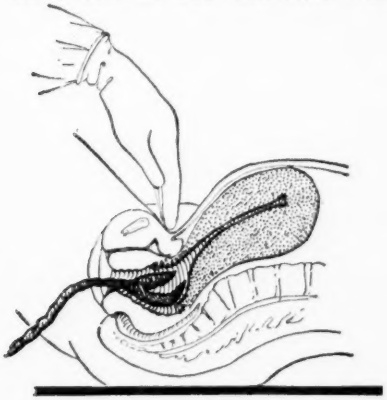


Fig. 1. Downward pressure applied

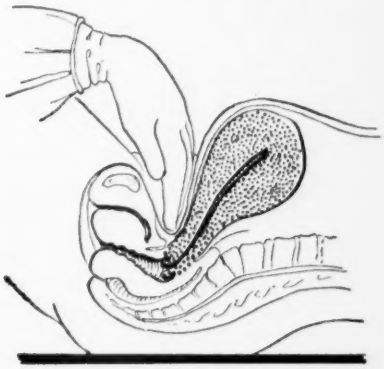


Fig. 2. Holding uterus out of pelvis

Management of the third stage of labor. South. M. J. 46:379-384, 1953.

Physiologically, the third stage of labor is divided into the phases of separation and expulsion. A combination of nonintervention in the phase of separation and immediate aid to the expulsive phase is appropriate.

The vertex should be delivered slowly and deliberately. The upper respiratory passages are aspirated immediately. The shoulders and body are slowly freed as far as the umbilicus. Then the process is stopped and a loop of cord is pulled down to be palpated. The arrest in delivery lasts for at least three minutes or until definite uterine contractions occur. During the delay, further aspiration is done, and the baby nearly always cries spontaneously. The delay facilitates efficient separation of the placenta and gives the baby additional blood.

The baby is then slowly delivered and the cord clamped and cut. Vaginal touch is immediately done to ascertain whether the placenta has separated. Upon separation, the uterus is stroked upward with slight traction on the cord. Downward pressure is applied to the separated placenta to complete expression (Fig. 1). The uterus is held high up out of the pelvis until firmly contracted (Fig. 2).

Pitocin, 0.5 cc., is given intravenously, and ergonovine, 0.2 mg., intramuscularly. The placenta is carefully inspected, as is the cervix. Perineal repair is performed.

Effects of Stilbestrol on Infants

EFRAIN M. CANARIO, M.D., GILBERT HOUSTON, M.D., AND CLEMENT A. SMITH, M.D.

WHEN pregnant women are given stilbestrol in proper dosage, no deleterious effects on the infant are noted either during the newborn period or in the first two or three years of life. The estrogen is often administered prophylactically during pregnancy to prevent abortion, reduce the incidence and severity of late pregnancy complications, and increase fetal salvage.

Efrain M. Canario, M.D., Gilbert Houston, M.D., and Clement A. Smith, M.D., of the Boston Lying-In Hospital and Harvard University, Boston, find no significant differences in the frequency of illness, the physical, skeletal, and intellectual growth, and the age at dentition of infants and young children born after maternal treatment with stilbestrol as compared to those delivered of mothers not given the estrogen. The infants studied were all born before term to primiparous women. The weights and lengths of the infants of the stilbestrol-treated mothers exceeded those expected at gestational age, and these babies had fewer congenital defects.

Postnatal growth and development of infants born after diethylstilbestrol administration during pregnancy. Am. J. Obst. & Gynec. 65:1298-1304, 1953.

When labor is long continued, the safety of both mother and infant requires that the cause be determined.

Prolonged Labor

J. P. GREENHILL, M.D.
Cook County Graduate School of Medicine, Chicago

IF a woman has had labor pains for eighteen hours, the physician should carefully analyze the situation, declares J. P. Greenhill, M.D. Labor is considered to begin if successive uterine contractions are accompanied by progressive effacement and dilatation of the cervix and ultimate delivery of the baby.

The average length of labor is about thirteen hours for primigravidas and eight hours for multigravidas. The incidence of prolonged labor is from 2 to 9%. The condition increases maternal and infant mortality. The incidence of puerperal infection and postpartum hemorrhage is also augmented.

The 3 most common conditions associated with prolonged labor are irregular uterine action, cephalopelvic disproportion, and abnormal presentation. Labor may be prolonged by a constriction ring. Large babies are born as fast as small ones.

False pains must be differentiated. Such pains are of even intensity and rarely produce dilatation of the cervix. When ⅙ gr. of morphine is administered hypodermically, false pains will usually be relieved while true pains will at most only be slowed.

Psychologic preparation of primigravidas along the lines suggested by Grantly Dick Read may help prevent uterine inertia.

Labor should not be forced in a patient who may be having false labor pains. Too much sedation and frequent examinations should be avoided.

After eighteen hours a thorough study of the patient, auscultation of the fetal heart, and a careful vaginal examination are made. The patient's mental attitude should be appraised. Roentgenograms are made. If the membranes are intact and no disproportion exists, the membranes are ruptured.

Intravenous fluids, sedation for sleep and rest, and moral support are needed. An enema is given and the bladder is watched for distention. Large doses of antibiotics are supplied.

A hand is placed on the abdomen and the contractions are evaluated as to strength, duration, frequency, and effect on the descent of the head. If the pains are irregular, weak, and of short duration and do not efface and dilate the cervix, intravenous pituitary extract is mixed with 5% glucose in a concentration of 1 minim for each 100 cc. of fluid and given at the rate of 25 cc. for the first half hour and 100 cc. per half hour there-

Prolonged labor. Obst. & Gynec. 1:476-485, 1953.

Cervix in sacral hollow

after. If the fetal heart tones are greatly slowed during a prolonged severe contraction, the extract is discontinued.

Cesarean section is preferred over the use of pituitary extract for women who have had 4 or more children.

Intravenous calcium gluconate may stimulate contractions in some cases of uterine inertia, but should not be given if a drug of the digitalis group has been administered. Hot milk and molasses enemas, separation of the membranes around the internal os and lower uterine segment, and rupture of the membranes may overcome weak pains. Scalp traction is used if the child is dead.

Occasionally in a primigravida the baby's head is deeply engaged but the cervix is far back in the hollow of the sacrum. The cervix is gently pulled to midpelvis, the membranes of the lower uterine segment are separated, and the head is pushed up a little to allow some amniotic fluid to run down and make a pouch (see illustrations).

Sometimes the cervix dilates to 8 or 9 cm., then progress ceases, and the cervix, especially the anterior lip, becomes thick and edematous. If the head is engaged and the cervix nearly dilated, the thick anterior lip may be pushed upward behind the symphysis with 2 fingers during one or more uterine contractions, allowing the head to slip by.

A constriction ring dystocia is treated by intelligent expectancy and good support during the first and second stages. The uterus will not rupture spontaneously if the cephalopelvic relation, position, and presentation are normal. Often the ring relaxes.

Deep anesthesia is necessary to overcome a constriction ring; 8 minims of adrenalin hypodermically may help. Forceps, version, and extraction and craniotomy are contraindicated. When the ring cannot be overcome, low cervical section

Cervix pulled to midpelvis

is done and antibiotics are given.

During prolonged labor, absolutely no food and only small amounts of fluid are given orally. Oxytocics and blood for transfusion are made ready. Local anesthesia is used whenever possible.

Babies born after protracted delivery require special care. Many need resuscitation; some are in shock. The air passages should be cleared, preferably with a tracheal catheter. The child should be kept warm and given ample oxygen and prophylactic antibiotics.

Most patients who have experienced prolonged labor and who desire children conceive readily again. Subsequent pregnancies and labors are usually normal.

Endometrial Polyps

ROGER B. SCOTT, M.D.

CAREFUL search for polyps in every curettage might avert many unnecessary hysterectomies, since endometrial polyp is often the unsuspected cause of gynecologic symptoms, particularly leukorrhea and abnormal uterine bleeding.

Benign polyps are found in 2 to 8% of all removed uteri, without predilection for any age. Extremely large polyps are most common after the menopause.

Intermenstrual spotting, particularly postcoital, is the most suggestive evidence of endometrial polyp, according to Roger B. Scott, M.D., of Western Reserve University, Cleveland. Leukorrhea is a frequent early sign. Many uterine polyps are asymptomatic. Only when the tip is hemorrhagic or necrotic can the polyp be reasonably ascertained as the source of bleeding.

Intact polyps are readily removed with a one-quarter curve Randall kidney clamp. Specimens obtained in this manner should be embedded separately to facilitate microscopic diagnosis. Fragmented polyps in mixed curettings obtained by routine curettage are difficult to differentiate from endometrial hyperplasia.

When correlated with history, examination, and operative impression, microscopic findings should offer the clinician sufficient diagnostic evidence. The lack of hyperactive glandular epithelium or stroma; edema, vascularity, or fibrotic character of the stroma; and the character of the rest of the endometrium are points to consider in differentiating polyps from endometrial hyperplasia. A gross polypoid pattern may be a part of hyperplasia and is also seen in endometrial carcinoma and sarcoma. Present opinion considers malignant transformation of endometrial polyps rare.

The elusive endometrial polyp. Obst. & Gynec. 1:212-218, 1953.

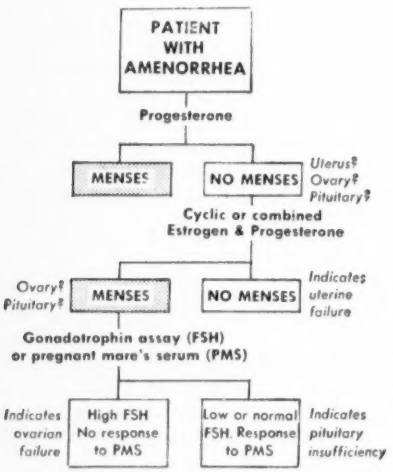
The etiology of amenorrhea may be found by testing the functional status of uterus, pituitary, and ovary.

Diagnosis of Amenorrhea

HERBERT S. KUPPERMAN, M.D., MEYER H. G. BLATT, M.D., HANS WIESBADER, M.D., AND WILLIAM E. STUDDIFORD, M.D.
New York University–Bellevue Medical Center, New York City

SEVERAL relatively simple therapeutic tests may be employed to determine the cause of primary or secondary amenorrhea. The diagnostic plan, as explained by Herbert S. Kupperman, M.D., Meyer H. G. Blatt, M.D., Hans Wiesbader, M.D., and William E. Studdiford, M.D., is based on the premise that 1 of 3 organs, the uterus, the ovary, or the pituitary gland, may be responsible for the absence or cessation of menses.

The method involves the use of [1] progesterone alone and [2] in combination with estrogen, [3] gonadotropic hormone assay, and [4] the administration of pregnant mares' serum. These diagnostic procedures are performed in an orderly manner to denote the functioning ability of the uterus, ovaries, or pituitary (see chart).



The patient is given a careful physical and gynecologic examination to eliminate the possibility of such causes of amenorrhea as thyroid or adrenal dysfunction, nutritional defects, pregnancy, and the menopause. Then 1 of the following 3 procedures is used:

1] Progesterone is injected intramuscularly either as a single dose of 100 mg. or as 25 mg. daily for four to five days, or

2] Anhydrohydroxyprogesterone is given orally in a dose of 10 to 20 mg. three times daily for seven days, or

3] Progesterone is given sublingually in a dose of 25 to 30 mg. three to four times daily for seven days.

Menstruation may or may not ensue within fourteen days. If the menses occur, no serious derangement of the pituitary, ovary, or uterus exists. Such amenorrhea may be psychogenic.

Progesterone in menstrual disturbances. Obst. & Gynec. 1:650-662, 1953.

If the menses fail to start, cyclic therapy with estrogen and progesterone is tried. The estrogen is administered orally for three weeks, followed by the same progesterone therapy used previously. Ethinyl estradiol, 0.05 mg. twice daily for three weeks; conjugated estrogens, 1.25 mg. twice daily for three weeks; or Dinestrol, 0.5 mg. twice daily for three weeks have each been found reliable.

If the patient does not menstruate after cyclic estrogen and progesterone therapy, the endometrium is not capable of menstruation. Destruction of the endometrium by infection or irradiation, complete removal of the regenerative portion of the endometrium through curettage, or congenital anomalies of the uterus may cause the amenorrhea.

If menstruation occurs, the patient has an adequate endometrium. The next test delineates competency of the ovary or pituitary. Gonadotropic assay of a twenty-four-hour urine specimen is made.

Excessive excretion of gonadotropic hormone indicates that the patient has little if any ovarian activity. Ovarian aplasia, agenesis, or loss of function may be responsible. Poor excretion of gonadotropic hormone suggests pituitary deficiency as the major factor in the etiology of the amenorrhea.

As an alternative to the gonadotropic assay, a potent gonadotropin, pregnant mares' serum, may be utilized. The dose employed is 500 I.U. injected intramuscularly three times weekly for three weeks. If the patient's ovaries can be stimulated, vaginal cornification is increased. Pituitary function can then be assumed to have failed. If little or no estrogenic effect is discerned, the ovaries must be absent, aplastic, or refractory.

By use of both a gonadotropic assay and pregnant mares' serum, these deductions can be made:

1] A patient with a high gonadotropic excretion but failure of response to pregnant mares' serum must have primary ovarian failure.

2] If a patient with a normal or low gonadotropic excretion has a response to pregnant mares' serum, the pituitary and ovary, while capable of activity, are functioning on a subthreshold level.

3] A patient who has an adequate response to pregnant mares' serum but no detectable gonadotropin in the urine probably has pituitary failure.

¶ POSTOPERATIVE ANALGESIA is obtained more readily with 3 mg. of Levorphan tartrate given subcutaneously than with 5 mg. of the parent racemate *d,l*-Dromoran Hydrobromide. With subsequent doses, Robert D. Hunt, M.D., of Memorial Hospital, Wilmington, Del., and Francis F. Foldes, M.D., of the University of Pittsburgh find that the two drugs are equally effective and that either is often superior to 10 mg. of morphine sulfate.

New England J. Med. 248:803-805, 1953.

Damaged vasomotor control with consequent arteriole constriction is believed to initiate causalgic pain.

Pathogenesis of Causalgia

VICTOR H. KUENKEL, M.D.
St. Vincent's Hospital, Los Angeles

THOROUGH understanding of anatomic and physiologic principles in the etiology of causalgia is essential to rational therapy. Results of treatment are more dependent on accurate blocking than on specific concentrations of the drug, observes Victor H. Kuenkel, M.D.

Causalgia is a syndrome characterized by pain in either the upper or lower extremity preceded by peripheral nerve injury and manifested by tissue changes in the affected part. These tissue changes are typical of inadequate circulation.

The pain occurs either immediately after the injury or within forty-eight hours and continues until sympathetic nerve block, nerve section, or sympathectomy is done. Causalgia is never associated with complete interruption of a peripheral nerve. Complete section of the nerve at or above the site of injury will relieve the pain.

Phantom limb is not related, since the pain of phantom limb is produced by neuroma formation with the constant stimulation of somatic afferent fibers in the nerve besides the general visceral afferent fibers that are involved in producing the pain of causalgia.

Gross and microscopic anatomic evidence indicates that the nerve pain fibers involved in causalgia are those distributed to the blood vessels of the extremities and are general visceral afferent fibers. Most of the fibers are carried directly to the posterior root ganglia by the peripheral nerves. The evidence also indicates that stimulation of postganglionic vasoconstrictor fibers produces vasospasm, which is followed immediately by pain in the area supplied by the blood vessel. Also, after postganglionic sympathectomy, the neuroeffector mechanism at the junction of the efferent nerve and the smooth muscle fiber becomes so highly sensitized to epinephrine that the normal physiologic concentrations of epinephrine cause pronounced vasoconstriction.

The initial pain of causalgia is produced by postganglionic section in the peripheral nerve. The injury causes an initial stimulus to the peripheral end of the postganglionic effector mechanism, resulting in arteriolar spasm. The spasm and pain continue because the neuroeffector mechanism is sensitive to epinephrine in the blood.

If the condition is allowed to persist, tissue anoxia results, manifested by a series of typical signs—either dry and scaling skin or ex-

Causalgia—pathogenesis and treatment. California Med. 77:374-376, 1952.

tremely wet, cold, and clammy skin with brawny induration of the underlying tissue in the distribution of the injured nerve.

Treatment of causalgia in the lower extremity consists of blocking the lumbar sympathetic chain at L2, L3, and L4 with procaine or Intracaine. For more permanent results, alcohol in concentrations of 60 to 90% may be used.

For causalgias of the upper extremity, blocking or sympathectomy should be confined to T2 and T3, since this will produce complete cessation of pain without the danger of causing Horner's syndrome of permanent duration, which sometimes develops subsequent to alcohol nerve blockade or after surgical excision of the lower cervical ganglia.

Prevention of Postanesthetic Hypotension

JOSEPH J. BUCKLEY, M.D., AND ASSOCIATES

ALL patients given general anesthesia, regardless of the agent used, require help with spontaneous respiration.

An experienced anesthesiologist can provide better pulmonary ventilation by rhythmic manual compression of the breathing bag than with any machine yet devised, believe Joseph J. Buckley, M.D., Frederick H. Van Bergen, M.D., Allen B. Dobkin, M.D., E. B. Brown, Jr., Ph.D., Fletcher A. Miller, M.D., and Richard L. Varco, M.D., after investigation of the syndrome of cyclopropane shock in 31 cases at the University of Minnesota, Minneapolis.

Alveolar carbon-dioxide tension was recorded during light anesthesia, using intubation, a closed circle carbon-dioxide absorption system, and a mass spectrometer.

Of 15 subjects allowed to breathe unassisted, all had high carbon-dioxide values averaging 12.3%, and systolic blood pressure rose about 33 mm. of mercury above preoperative heights.

As soon as anesthesia was stopped, carbon dioxide decreased and arterial blood pressure fell an average of 47 mm. below preoperative levels, with a maximum drop of 108 mm. Degree of hypercapnia was directly related to severity of the hypotensive reaction.

Of 16 subjects with assisted breathing, all had approximately normal carbon-dioxide values, and only 2 had a significant fall of blood pressure.

Further investigation showed that ether-oxygen, intravenous curare, and other methods of anesthesia require respiratory aid, at least until acidotic trends can be shown by a simpler analyzer than the mass spectrometer.

Postanesthetic hypotension following cyclopropane: its relationship to hypercapnia. Anesthesiology 14:226-237, 1953.

Supposed harmful effects of preoperative radiotherapy for breast cancer have been overemphasized.

Radiation Therapy for Breast Cancer

C. L. ASH, M.D., VERA PETERS, M.D., AND NORMAN C. DELARUE, M.D.

Ontario Institute of Radiotherapy and Toronto General Hospital, Toronto

THE most effective therapy for advanced breast cancer without distant metastases is high-voltage irradiation with subsequent radical mastectomy.

Among other advantages of preoperative treatment is extensive destruction or devitalization of malignant cells, with less chance of surgical dissemination. A previously inoperable lesion may regress, making mastectomy feasible.

Supposed harmful effects, such as slower healing and increased edema after surgery, are no more serious with preoperative than with postoperative radiation.

When courses were given after surgery to 921 patients, in most instances for cancer of Stages 1 to 3, the five-year survival rate was 43%. But preoperative radiotherapy of 116 persons, 88% in Stage 4 or 5, resulted in survival of 40% for at least five years.

A methodical plan of treatment for all phases of cancer growth is outlined by C. L. Ash, M.D., Vera Peters, M.D., and Norman C. Delarue, M.D. Technics are chosen according to Richards' classification of mammary tumor. Stages of carcinoma are determined largely by 2 factors: retraction and invasion.

Local retraction, which indicates active response of the host to malignant cells, is shown by dimpling of skin when the breast or arm is lifted, restricted movement on contraction of the pectoralis major, and other signs. Invasion of surrounding tissues or lymphatic plexuses is deduced from such changes as ulcerated skin, peau d'orange, brawny edema, and satellite nodules.

The 5 stages of cancer are:

1] Movable tumor alone

2] Movable tumor with axillary nodes

3] Retraction with or without axillary nodes

4] Invasion with or without axillary nodes

5] As in any other stage, but with distant metastases

TREATMENT

Stage 1—Radical mastectomy is done without radiation. Diagnosis must be verified by incisional biopsy at operation.

Stage 2—Radical mastectomy is followed by radiation, if axillary involvement is confirmed pathologically.

Stage 3—Preoperative radiation and radical mastectomy are indi-

The argument for preoperative radiation in the treatment of breast cancer. Surg., Gynec. & Obst. 96:509-521, 1953.

cated by [1] tumor more than 6 cm. in diameter, with or without retraction or spread to armpits, [2] size under 6 cm. and axillary metastasis showing retraction, [3] small tumor in a medial breast quadrant, with retraction and axillary involvement.

Radical mastectomy and postoperative radiation are advised [1] for tumor less than 6 cm. in width, plus retraction, with or without movable axillary nodes, in an outer quadrant, and [2] for a small tumor with retraction but no nodal involvement.

Stage 4—Preoperative radiation and radical mastectomy are done almost routinely, except for old people with longstanding, relatively inactive lesions.

Stage 5—Treatment is palliative. The local breast tumor, skin of the chest wall, axillary, supraclavicular, and internal mammary nodal areas may be irradiated with or without surgery or hormone therapy.

Surgery is undertaken [1] if supraclavicular metastasis is controlled by radiation and an extensive growth in breast or axilla ought to be removed, possibly by simple mastectomy with modified axillary dissection, or [2] for a toxic, infected, fungating, or ulcerative lesion, with or without preoperative radiation.

Endocrine therapy is prescribed to supplement radiation through extra ports, [1] for distant lymphatic metastasis with contralateral axillary or inguinal involvement or satellite skin nodules beyond the limits of usual ports, or [2] with hematogenous metastasis, for example to the lung. Widespread lesions in bones require both hormones and radiation by 200 kv.

¶ ARTERIAL HYPERTENSION is common with poliomyelitis, occurring about 3 times as often in paralytic as in nonparalytic cases. Adopting an increase of 15 mm. of mercury in diastolic pressure as an arbitrary measure, Meyer A. Perlstein, M.D., of Michael Reese Hospital, Chicago, and associates found the abnormality in 65 of 195 patients; 43% were paralytic, and 13% nonparalytic. The incidence was highest among respirator subjects.

Pediatrics 11:628-633, 1953.

¶ INFANTILE PYLOROSPASM and cardiospasm may be treated successfully with Banthine Bromide. With doses of 5 mg. given four times a day one-half hour before feeding, Harold Levy, M.D., and Ben Zweifler, M.D., of Brooklyn Women's Hospitals observed immediate cessation of vomiting and faster gastric emptying. One month of therapy sufficed for 8 infants with pyloric dysfunction. In a case of spasm of the cardia, 10 mg. of the anticholinergic five times daily for over two months effected demonstrable improvement.

J. Pediat. 42:673-679, 1953.

Early treatment of the allergic child will accomplish much and is within reach of every practitioner.

Management of the Allergic Child

LEO H. CRIEP, M.D.
University of Pittsburgh

THE early recognition of allergic conditions in children, with institution of proper treatment, brings gratifying relief and frequently prevents secondary complications. Children do not outgrow allergies.

Leo H. Criep, M.D., believes that some common principles of treatment are applicable in all instances of allergy of infants and children.

The recognition of emotional disturbances, in both parents and in child, is of great importance. Foci of infection should be removed. Inhalants and foods to be avoided are determined by information obtained from the history, skin tests, and trial diets.

Parents are given written directions for dust avoidance. Environmental changes are purposely brought about, and trial diets instituted.

For babies, evaporated milk is first substituted for cow's milk. If symptoms persist, a form of modified cow's milk is tried next. Finally, milk substitutes of vegetable origin are employed.

Once a satisfactory milk or milk substitute has been found, cereals such as rice or oatmeal are added to the child's diet. Then single vegetables are tried—carrots, beets, asparagus, and spinach being the least likely to cause symptoms. Fruits are then added, beginning with pears and apples. Lamb may be introduced. The child is given vitamins individually or as synthetic multivitamins.

Some allergic conditions are specific problems. Perennial nasal allergy may be found at any age and is frequently mistaken for colds. However, the presence of eosinophils in the nasal secretion clarifies the differentiation.

In cases of seasonal allergic rhinitis, no child is too young for prophylactic pollen treatment. Antihistamines are valuable in symptomatic treatment of nasal allergy. Hyposensitization is done with antigens which are difficult to avoid, such as house dust extract. Dosage should be increased cautiously because persistence of symptoms may be caused by overtreatment.

Bronchial asthma, which may be revealed only by recurrent and intractable cough, responds to allergic management. Steam inhalations, oxygen, ephedrine, expectorants, adrenalin, antihistamines, aminophylline, sedatives, fluids, and antibiotics are employed to good advantage. Care must be taken to avoid confusing asthma with such conditions as pancreatic fibrosis,

The management of the allergic child. Pennsylvania M. J. 56:433-438, 1953.

congenital laryngeal stridor, pulmonary tuberculosis, enlarged tracheobronchial lymph glands, croup, Löffler's syndrome, or foreign body in the lung.

The most trying problem in allergic management is the infant with severe atopic dermatitis. General measures include the following:

The irritating effects of rough clothing and blankets, particularly wool, are avoided. The room should be kept at an even temperature of 70 to 72°. Digestive disturbances and irritating fumes and odors are eliminated.

To prevent scratching, the child's arms and legs should be immobilized by aluminum cups or cardboard pads with cotton. Nails are filed and taped.

Sedatives and antihistamines are administered as needed. Local treatment is instituted, but with caution not to exacerbate the condition by local irritation or sensitization. Soap is not well tolerated so substitutes may be used.

Hot, red, weeping lesions may be treated by wet compresses of Burow's solution 1:30 and a water-soluble ointment applied. A mild dusting powder may also be used afterward. The lesions should not be covered and the skin should be kept soft and oiled. Calamine lotion may help.

Colloidal starch baths, ½ lb. to a tubful of water, or cooked oatmeal, 2 cups in a cloth bag, are valuable. As the condition becomes less acute, boric acid ointment, calamine lotion, cocoa butter, or lanolin is prescribed. Burow's ointment, consisting of 1 part of Burow's solution, 2 parts of Aquaphor or anhydrous lanolin, and 3 parts of Lassar zinc paste, is particularly desirable. When secondary infection occurs, 0.5 to 1% ammoniated mercury ointment or 3% Vioform ointment is effective.

Finally, for chronic low-grade inflammatory lesions or when lichenification is found, softening agents, such as Crisco, a mild salicylic acid ointment, or 1% tar in Lassar paste is helpful.

In all such cases, any preparation should be used for a trial period over one area only, so as to avoid aggravating the local condition.

¶ KARTAGENER'S SYNDROME in children comprises dextrocardia, atelectasis, bronchiectasis, and sinusitis, but situs inversus may not be complete. Resection of the affected lung tissue was done for 3 of 5 patients aged 6 weeks to 14 years by Lloyd B. Dickey, M.D., of Stanford University, San Francisco. Results were beneficial. The sinal involvement is less amenable to therapy. The developmental sequence in the disease is probably a congenital anomaly of the cardiovascular system and pulmonary collapse preceding the degenerative bronchial changes and the inflammation of the sinuses.

Dis. of Chest 23:657-666, 1953.

Laboratory study is often needed to determine the proper medication in cases of external ear inflammation.

Therapy for Otitis Externa

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Tulane University of Louisiana, New Orleans

FOR many years considered a fungous disease of little importance, otitis externa has been found, especially in the Pacific Theater during World War II, to be a major source of lost man-hours and to be caused most often by bacteria.

Management of the disease has not been simplified by this discovery, points out J. W. McLaurin, M.D. The otic infections must be differentiated not only as to bacteriology but also as to whether the condition is acute, subacute, chronic, or recurrent. In many cases, previous treatment may have so altered the situation as to make strict classification impossible.

The elements of therapy include:

- Relief of pain or discomfort
- Cleansing of the external auditory canal
- Elimination of the causative agent by medication
- Restoration of the external auditory canal to a healthy physiologic state.

Alleviation of pain often must come first. One treatment of 100 r through a cone no larger than 2.5 cm. in diameter usually gives relief. If this fails, further roentgen application is not likely to succeed and should not be given. The roentgen therapy is supplemented with some sedative and codeine, Demerol, or morphine as needed.

If the swelling is slight, the canal may be cleansed by suction followed by cotton wipes dipped in alcohol. When the swelling is too great to permit suction, the canal is irrigated with ordinary tap water, rinsed with 95% alcohol, and then dried by compressed air.

If the ear is too swollen for such measures, a wick is inserted, saturated with Burow's solution. The patient then applies the solution in wet dressings for fifteen to twenty minutes every three or four hours. After twenty-four hours, the swelling has usually subsided sufficiently to permit cleansing.

Antibiotic agents should not be employed promiscuously. Therapy should follow these general principles:

1] Only agents should be used to which the causative microorganism is known to be sensitive. The experienced otologist will ordinarily be able to determine clinically whether the agent is fungus or a gram-positive or gram-negative bacteria. In case of doubt, the exudate should be cultured from a smear taken under direct vision by

A modern therapeutic regimen for otitis externa. Eye, Ear, Nose, & Throat Monthly 32:319-323, 1953.

the physician, not by a technician.

Report of the culture should be obtained in twenty-four hours but the culture should be held in the laboratory for at least three weeks for future reference. Some molds and fungi do not become manifest before this time.

2] The therapeutic agent must be employed in sufficiently high concentration to be immediately effective. Undertreatment at the onset predisposes to drug resistance. Indiscriminate use of antibiotics in the past has made resistance more and more likely, so that high concentrations of the agent are required.

3] The *p*H of the therapeutic agent must be on the acid side.

4] The medication must cover the entire surface. The patient is instructed to fill the whole canal with the substance, not just to instill 2 or 3 drops.

5] The agent must be applied sufficiently long each time, for at least five minutes.

6] The proper vehicle must be used, preferably an aqueous solution, since this avoids the presence of more than one ingredient. If sensitivity occurs, the antibacterial agent is then known to be responsible. Absorption of the medication may be inhibited by a salve.

7] If the patient does not benefit promptly, cultures are made or repeated and sensitivity tests used.

8] Topical applications must be discontinued as soon as possible. Penicillin and other agents when used topically for more than five days may produce erythema, vesiculation, and other signs of sensitivity. Only 0.5 oz., or at most 1 oz., of the solution is prescribed in order to limit self-medication.

9] The patient is given written instructions.

10] Predisposing causes must be controlled as far as possible. Such factors include climate and humidity, trauma, allergy, dermatitis anywhere on the body, endocrine dysfunction, foci of infection, avitaminosis, anemia, systemic conditions such as diabetes, and psychogenic causes.

Restoration of the normal physiologic state is accomplished by prompt cessation of active therapy as soon as the predominant microorganism is under control, and the institution of general hygienic measures.

¶ STREPTOCOCCAL PHARYNGITIS is more effectively treated by penicillin if the drug is administered early in the disease. When therapy is instituted within thirty-one hours of onset of symptoms, Capt. Loring L. Brock, M.C., U.S.A.F., and Capt. Alan C. Siegel, M.C., U.S.A.R., of the Francis E. Warren Air Force Base, Wyoming, and Western Reserve University, Cleveland, find that the antistreptolysin response after twenty-one days is reduced by 60%. When the antibiotic is withheld until the fifth day of illness, the suppression is only 40%.

J. Clin. Investigation 32:630-632, 1953.

A focus of infection persisting despite antibacterial and antiallergic measures may require removal.

Management of Foci of Infection

PAUL S. RHOADS, M.D.
Northwestern University, Chicago

THE zeal for excising all accessible tissue believed to harbor pathogenic bacteria has waned since the excessive use of such measures in the 1920's. However, when combined antibacterial and antiallergic therapy fails, surgical removal of foci may become necessary to correct protracted low-grade infection and prevent systemic disease.

Some individuals have continuing infections for long periods without the appearance of systemic disease, but this does not invalidate the fact that foci of infection may act as tissue sensitizers, responsible in part, at least, for such conditions as rheumatic fever or subacute nephritis. Nor does failure of the symptoms of systemic disease to ameliorate swiftly after the removal of focal infections prove that the focus was not involved in the entire phenomenon, observes Paul S. Rhoads, M.D.

Recognition of infection in the upper portions of the respiratory tract in cases of chronic disability often taxes the diagnostic resources of both otolaryngologist and internist. If evidence of allergic sensitivity is found, elimination of the responsible factors should be tried. Desensitization may be necessary.

If bacterial infection of the nose and throat is likely, stained smears and cultures should be made from material obtained by swabbing. Signs of infection include leukocytosis, fever, purulent secretions from highly inflamed nasal mucous membranes, and intensely inflamed throat, with or without exudate.

Cultures usually reveal an abnormal bacterial growth, but even if not, absence of infection cannot be assumed. Pathogens may grow in abundance in the depths of tonsillar crypts without appearing on the surface. When only moderate reddening of the mucous membranes, little or no tenderness over the paranasal sinuses, only slight diminution in light transmission, no clouding on roentgenogram, and no fever or leukocytosis are found, the problem of recognizing infection in the nasopharynx and paranasal sinuses becomes difficult. In these instances, enlarged cervical lymph nodes may constitute definite evidence of infection.

The administration of antibiotics does not free the physician from the responsibility of removing nasal polyps, shrinking the mucosa of the turbinates, occasionally irrigating antrums which contain chronic sup-

Joint responsibility of the otolaryngologist and the internist in removal of focal infection. Laryngoscope 63:249-261, 1953.

puration, opening tympanic membranes when frankly purulent exudates are enclosed, and other procedures to drain closed infection sites. Mastoidectomy must be performed occasionally.

In many cases, tonsillectomy is advisable, as when a young person has repeated attacks of tonsillitis with continuing evidence of infection, such as fever, leukocytosis, increased sedimentation rate slight muscle and joint pains, and cervical adenitis, after vigorous antibiotic therapy. Removal of such tonsils before rheumatic fever, rheumatoid arthritis, chronic infections of the urinary tract, or subacute bacterial endocarditis develops is constructive therapy.

Foam Rubber for Nasal Packing

M. JOSEPH LOBEL, M.D.

THE application of pressure by intranasal packing with foam rubber is an effective means of controlling posterior nasal bleeding and should be tried before resorting to surgery.

The advantages of foam rubber over other materials, as explained by M. Joseph Lobel, M.D., of New York City, include resiliency and porousness, permitting transmission of air and secretions. The material exerts moderate, even pressure on opposing surfaces without obstructing circulation and can be easily moved forward in the nasal chamber or removed without trauma. The substance is sterilized by boiling, or washing with green soap, and is readily cut to fit the individual nasal cavity. Foam rubber does not cause discomfort or nasopharyngeal or otitic complications and does not interfere with nasal hygiene.

A spherical ball of No. 2 foam rubber, about 25 mm. in diameter, is adequate for 2 sponges when bisected. A piece of adhesive tape, 5 mm. in diameter, is affixed to the flat surface and through this a string, carried through the sponge, is firmly fixed. If required, additional withdrawal string is affixed in reverse order.

A small caliber nasal catheter is then introduced along the nasal floor and brought out through the mouth. The string with sponge attached is tied to the catheter, and the catheter is withdrawn and separated from the string at the nasal orifice. Traction is exerted on the string to bring the tampon into position. The string can then be held with adhesive.

The pack should remain in place for forty-eight to seventy-two hours, after which removal can be effected through either the nasopharynx or the anterior nares.

Epistaxis: use of foam rubber pack in its control. Eye, Ear, Nose & Throat Monthly 32:309-312, 1953.

Patients with the chronic postconcussion syndrome probably have some brain atrophy.

The Postconcussion Syndrome

B. P. SILFVERSKIÖLD, M.D.
Södersjukhuset, Stockholm

EVEN an apparently slight head trauma may produce permanent brain injury, though such effects are comparatively rare. Much more often the brain sustains severe trauma without demonstrable sequelae. Separating the injured from the unaffected is often a delicate problem, but one of particular importance in compensation problems.

The distinction is not important therapeutically, however, because simple psychotherapy, social advice, and physiotherapy will benefit most patients who have common headache, vertigo, and lassitude.

Studies of changes in carbohydrate metabolism, basal metabolic rate, and circulatory function are too equivocal to afford positive evidence of brain damage from the vegetative standpoint among patients who have prolonged disturbances after head injuries. The pneumoencephalographic examinations, however, may provide support for the theory that a brain lesion frequently is the basis of the patient's symptoms, finds B. P. Silfverskiöld, M.D.

The pneumoencephalograms of 50 patients with headache were compared with those of 65 patients with chronic postconcussion syndrome. Only 17 of the simple headache cases showed abnormal encephalograms, whereas 49 of the concussion cases had such abnormalities. Furthermore, 16 of the 65 postconcussion patients probably did not lose consciousness at the time of trauma; of this 16, encephalograms were abnormal in 11.

The carbohydrate metabolism, as measured by glucose, insulin, and adrenalin tolerance tests, may appear disturbed in acute, severe cases of head injury. Slight postconcussion disturbances of carbohydrate metabolism probably do not permit the conclusion that the brain has been injured. Emotional tension may influence the results.

The basal metabolic rate may be low in the postconcussion state, but the results of studies of this function vary widely and are similar to those obtained from studies of psychoneurotic patients.

Circulatory disturbances are suggested by the transient rise or fall in blood pressure and speeding or slowing of the pulse rate. These phenomena, occurring just after trauma, might sometimes be the result of damage of the vasomotor centers. Later in the postconcussion state, however, such circulatory signs seem to have the same pattern and to occur under circum-

Vegetative disorders of the postconcussion syndrome. J. Nerv. & Ment. Dis. 116:897-901, 1952.

stances similar to conditions associated with neurosis.

Whatever the causes of the symptoms in the postconcussion state, psychologic and gymnastic therapy can counteract the fatigue and other symptoms which form the chronic syndrome. No reason has been found to assume that the risk of permanent brain lesions is increased if the patient indulges in moderate activity in the subacute stage. This is even more true of the chronic phase.

Spontaneous Intracranial Hemorrhage in Children

WALLACE P. RITCHIE, M.D., AND GERALD HAINES, M.D.

A CONGENITAL vascular anomaly, usually angiomatous in nature, is responsible for most spontaneous subarachnoid hemorrhages in children. Successful treatment depends upon accurate localization and surgical intervention. Angiography is valuable in diagnosing these lesions, state Wallace P. Ritchie, M.D., of the University of Minnesota, Minneapolis, and Gerald Haines, M.D., of Schenectady, N. Y.

Hemorrhage from toxins, infectious diseases, blood dyscrasias, and tumors are rare causes of intracranial hemorrhage. A high incidence of intracerebral bleeding is associated with coarctation of the aorta because of the sustained cerebral hypertension.

Determining the cause of intracranial hemorrhage in children presents some difficulties not encountered in adults. Primarily the problem is to decide whether the lesion is traumatic. Members of the family can usually remember some head injury that the child has had in the near or distant past.

Some patients recover with conservative therapy, but surgery gives better over-all results. Of 752 collected cases in which medical treatment was employed, 48% of the patients died. In 469 cases with surgical treatment, the mortality was only 14%.

Angiomas are usually unsuspected before sudden onset of intracranial hemorrhage, causing headache, vomiting, slurred speech, hemiparesis, unconsciousness, and bloody spinal fluid. A carotid angiogram should be made if at all possible. The hematoma should be evacuated and angioma excised or clips placed to devascularize the area. Even after the hematoma has been located, angiographic studies give valuable aid in the localization of the feeding vessels so that these vessels can be readily exposed and clipped.

Although angiography is the ideal method of demonstrating cerebral angiomas, on occasions the method is interdicted or unsuccessful. Ventriculograms may help in localizing these hemorrhages.

Spontaneous intracranial hemorrhage in children. Arch. Surg. 66:452-460, 1953.

Transient and reversible insufficiency of the cerebral blood flow may damage the brain.

Cerebral Vascular Insufficiency

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SANFORD F. ROTHENBERG, M.D., AND TRACY J. PUTNAM, M.D.
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MAINTENANCE of the cerebral blood pressure at normal levels is important, especially for an elderly patient with narrowing of cerebral arteries.

Acute cerebral disturbances are usually considered to be the result of cerebral hemorrhage, thrombosis, embolism, or spasm. Many cases of cerebral infarction occur without occlusion of the cerebral arteries and doubt exists concerning the role of spasm in the production of focal cerebral disorders. Eliot Corday, M.D., Sanford F. Rothenberg, M.D., and Tracy J. Putnam, M.D., believe that another mechanism is involved in some cases—acute cerebral vascular insufficiency. This term applies to generally transient and reversible insufficiency of the cerebral blood flow, although the deleterious effect upon the brain may be permanent.

A dependable collateral blood supply from the opposite hemisphere is lacking when the flow through a single cerebral vessel is compromised by disease. The arterial supply of each cerebral hemisphere is independent of the supply of the other, since collateral circulation through the circle of Willis does not function under ordinary conditions. The anastomoses joining the two hemispheres function only when a relative unilateral fall in arterial pressure occurs.

The nutrition of the posterior one-third of a hemisphere seems to depend upon the adequacy of flow through a rather remote tributary, the homolateral vertebral artery.

The combination of localized narrowing in the arterial tree and hypotension can readily lead to severe ischemia of the area supplied by the involved vessel. If hypotension is severe, collateral circulation also fails, further endangering the already ischemic region.

The brain cells may be seriously and sometimes irreversibly damaged unless pressure is promptly restored to an adequate level. Since cerebral arterial blood pressure is directly proportional to mean systemic arterial pressure, restoration of cerebral pressure must usually be done by systemic measures.

Cerebral vascular insufficiency has been demonstrated by experiments in monkeys. Electroenceph-

Cerebral vascular insufficiency. Arch. Neurol. & Psychiat. 69:551-570, 1953.

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alograms were made after the animals' carotid vessels were partially or completely ligated. When the blood pressure is then lowered by bleeding, focal changes appear on the side of the ligation similar to those found with hemiplegia. When blood pressure is restored, the electroencephalographic tracings will return to normal. The changes are due to a drop in blood pressure, rather than simply to anemia.

Significant abnormalities are produced in both hemispheres if blood pressure is brought to extremely low levels, but the abnormalities in only the ligated side are exaggerated when the pressure is raised.

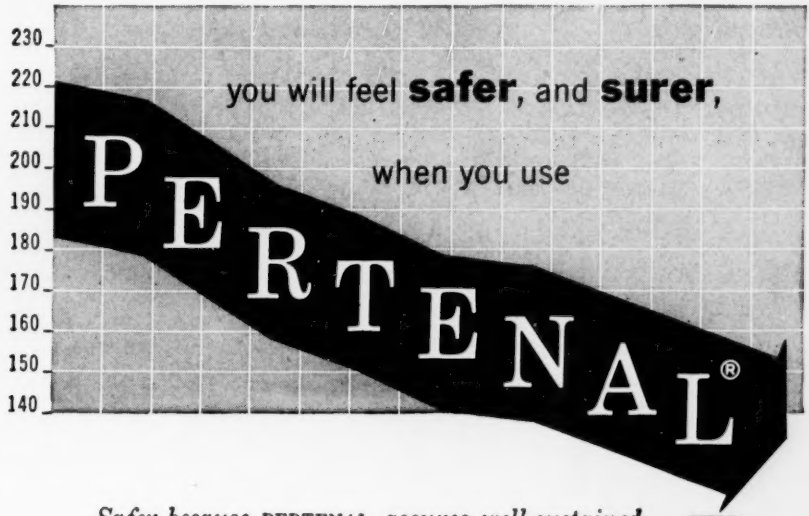
Sudden systemic hypotension may occur during many and diverse conditions. Cerebral vascular insufficiency, either localized or generalized, is found with hemorrhagic shock, coronary shock, surgical or traumatic shock, postural hypotension, hypotension caused by sympathetic block, Smithwick sympathectomy, carotid sinus stimulation, spinal anesthesia, and cardiac surgery.

The condition may be the result of miscellaneous extracranial factors such as surgical ligation of the carotid arteries, spontaneous thrombosis of the internal carotid artery, gravitational states, or the use of antihypertensive drugs.

If the blood pressure is promptly restored, electroencephalographic changes and symptoms of cerebral origin, such as hemiplegia and hemianesthesia, usually disappear; if not, focal changes will be permanent in patients with cerebral arteriosclerosis or congenital anomalies.

¶ INTERVERTEBRAL DISK or vertebral injury resulting from spinal puncture may be immediately evident or remain asymptomatic for as long as six months. In cases involving such injury, the execution of the procedure has usually been difficult. S. Frank Redo, M.D., of the New York Hospital, New York City, finds that the type and extent of the damage caused by the needle influences the rapidity of onset of symptoms more than does the age of the patient or the purpose of the operation. Manifestations in all cases are low back pain, limitation of motion of the lumbar spine, muscular weakness, and difficulty in walking, stooping, and lifting. Radiographic changes, comprising chiefly thinning of the disks and sclerosis, rarefaction, and destruction of the vertebral body, may be apparent as early as the eighteenth day. Treatment consists in immobilization and, if necessary, antibiotics. The four mechanisms responsible for the lesion are [1] puncture of the annulus fibrosus with escape of nuclear material, [2] impingement of the needle on the annular portion resulting in inflammation, [3] extrusion of the pulpy substance into adjacent vertebral bodies through a defect in the cartilaginous plate, and [4] introduction of microorganisms by the needle.
Surgery 33:690-701, 1953.

in **hypertension**



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Therapeutic Preparations for the Medical Profession

Combined chemotherapy for renal tuberculosis may at least modify the lethal course of the disease.

Chemotherapy for Renal Tuberculosis

JOHN K. LATTIMER, M.D., FRED LERMAN, M.D., PHILIP LERMAN, M.D., AND LOUIS L. SPIVACK, M.D.

Columbia University, New York City, and Kingsbridge Veterans Hospital, Bronx, N. Y.

TREATMENT for genitourinary tuberculosis with the new antituberculosis drugs yields encouraging results. Symptomatic, roentgen, and bacteriologic evidence of benefit was noted by John K. Lattimer, M.D., Fred Lerman, M.D., Philip Lerman, M.D., and Louis L. Spivack, M.D., among 458 patients, in various Veterans Administration hospitals, with genitourinary tuberculosis given chemotherapy alone and observed for five years.

STREPTOMYCIN AND PAS

Combined drug therapy consisted of 1 gm. of streptomycin every third day and 12 gm. of PAS daily for periods of one to three years.

The majority of patients with frequency or dysuria have symptomatic improvement. Relief may be so great that economic cripples are able to return to work.

Serial pyelograms show lack of progression of cavitation while the patients are receiving treatment. Occasionally rapid contractures of strictures of the calyceal necks or ureters is noted.

Excretory urograms should be done every four months during treatment. Thus, if ureteral strictures are detected early, dilatation may be done.

In a group of 278 patients, only 2 died of uremia; 13 other deaths occurred in the group, all from pulmonary tuberculosis.

The larger the renal lesion, the worse the prognosis. The urine of patients with massive renal lesions cannot be permanently cleared of tubercle bacilli with streptomycin and PAS, although cultures may be free for periods of one to two years. Medium-sized lesions with only 1 calyx involved show 20% conversion after five years. Negative culture reactions are obtained for five years for 80% of patients who have tubercle bacilli and pus cells in the ureteral urine but no visible distortion on pyelograms.

ISONIAZID

Isonicotinic acid hydrazide is an effective drug when used in combination therapy and is not nephrotoxic. However, blood levels must be ascertained for patients with nitrogen retention, since isoniazid accumulates in the blood of patients with renal insufficiency and may cause convulsions. Hyperreflexia is not a true index of the blood level

Streptomycin, PAS and isoniazid in renal tuberculosis. J. Urol. 69:745-752, 1953.

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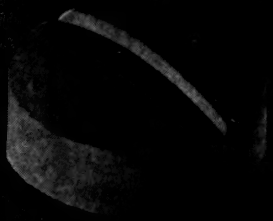

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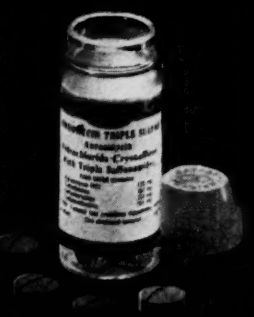
For the treatment of bacillary dysentery, this product should be administered on the basis of its aureomycin content at a dosage of 12.5 to 20 mg. per kilo of body weight. The average daily adult dose is 2 tablets 4 times daily, which provides 1 Gm. of aureomycin and 4 Gm. of sulfonamides. Children should receive proportionately less.

For the treatment of gonorrhea, the recommended dose is 2 tablets initially followed by one tablet at 6-hour intervals for 2 doses. This course may be repeated if necessary. BOTTLES OF 12 TABLETS.



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and cannot be relied upon as a warning sign of the impending toxicity.

Drug resistance is the most important limiting factor in the effectiveness of streptomycin, PAS, and isoniazid. Since the mode of action of each appears to be different, a combination of the three drugs may increase effectiveness.

SURGERY AND CHEMOTHERAPY

Since large fibrous and necrotic lesions are not apparently affected by streptomycin, PAS, or isoniazid, the best treatment for unilateral fibrocaseous renal tuberculosis appears to be nephrectomy. In cases with disease limited to one portion of the kidney, partial nephrectomy may be done with concomitant use of streptomycin in doses of 0.5 gm. every six hours for a week, and PAS given by clysis or infusion in doses of 20 gm. every twelve hours for two or three days immediately following the operative procedure.

Renal Complications of Lymphoma

AUSTIN S. WEISBERGER, M.D., AND LESTER PERSKY, M.D.

RENAL calculus formation is not uncommon with lymphoma. The calculi may cause obstruction, uremia, and death.

Elevation of serum uric acid and increased renal excretion of uric acid occur in leukemia and related diseases. Therefore, prophylactic measures should include maintenance of adequate urinary output, alkalinization of urine, and careful evaluation of renal function before and during therapy.

Among 283 patients with lymphoma, including cases of acute and chronic leukemia, Hodgkin's disease, lymphosarcoma, reticulum-cell sarcoma, giant follicular lymphoblastoma, and agnogenic myeloid metaplasia, 5.3% had renal calculi. No calculi were observed in 100 patients with metastatic malignant diseases of other types who had been treated by irradiation.

The incidence of calculi in nonleukemic patients with lymphoma is slightly higher than in leukemic patients. However, no calculi developed in any of 47 patients with Hodgkin's disease studied by Austin S. Weisberger, M.D., and Lester Persky, M.D., of Western Reserve University, Cleveland.

Renal calculi developed in 5 patients with lymphoma who had received no specific therapy. Therefore, therapy is not invariably a precipitating factor, but, if intensive, may participate in calculus formation by producing excessive breakdown of nucleoproteins with resulting excretion of uric acid in excess of urinary solubility.

Renal calculi and uremia as complications of lymphoma. Am. J. M. Sc. 225:669-673, 1953.

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*Cass, L. J. and Frederik, W. S.: Amer. Pract. and Dig. of Treat., 2:844, 1951. (In this study Robitussin was compared with ammonium chloride and terpin hydrate.)

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Primary closure of the bladder after 1-stage prostatectomy effectively relieves prostatic obstruction.

Suprapubic One-Stage Prostatectomy

GEORGE H. EWELL, M.D., AND JOHN J. MUELLER, M.D.
Jackson Clinic, Madison, Wis.

AN obstructive prostate of medium or large size is most satisfactorily removed by suprapubic 1-stage technic with primary closure of the bladder, according to George H. Ewell, M.D., and John J. Mueller, M.D., after experience in 88 cases. The method was judged satisfactory because of lack of immediate surgical reactions, few postoperative complications, general comfort, simplified nursing care, and, particularly, ultimate bladder function.

No hospital deaths resulted, and patients returned home able to void and with most of the suprapubic wounds healed and dry after a hospital stay of about fifteen days. In a comparable series without primary closure, hospitalization lasted about twenty-one days and 2 patients died in the hospital.

Operation is done without haste or attempts at blind enucleation through a small opening. A longitudinal suprapubic incision is made, the rectus fascia is incised, the muscles are separated, and the peritoneum is reflected.

The bladder is opened high. At the lower angles of the incision, the vesical wall is temporarily sutured to the anterior abdominal wall, in order to expose the bladder neck and protect the space of Retzius.

The prostate is enucleated digitally, often with the aid of sharp dissection. The overlying vesical neck may be cut with scissors to prevent tearing or stripping of the mucosa and bleeding.

A large oxycel gauze cone is inserted into the prostatic fossa, a gauze sponge being used for compression. Vas deferens ligation is done, the oxycel cone is removed, and tags are trimmed from the bladder neck. Bleeding points may be fulgurated or ligated.

A 24 or 26F Coppridge bag urethral catheter with whistle tip is employed, and a small oxycel gauze cone is generally tied around the tube just below the sac. The bag is partly filled with water and drawn into the prostatic bed.

Gauze is tamped around the rim, and the bag is adjusted and distended further, if necessary. From 20 to 30 cc. of fluid is commonly adequate. If larger amounts are required to control bleeding, some is released in four to six hours.

The bladder is freed from the abdominal wall and closed in layers, by a running suture of No. 0

Suprapubic one-stage prostatectomy with primary closure of the bladder. J. Internat. Coll. Surgeons 19:623-628, 1953.

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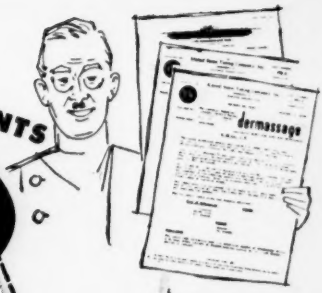

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Where the patient's comfort in bed (1) contributes in some measure to recovery, or (2) conserves nursing time by reducing minor complaints, you *cannot afford* a body rub of less than maximum effectiveness. You can depend upon Dermassage for effective skin protection *because it contains the ingredients to do the job.*

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plain catgut for mucosa and of No. 1 chromic catgut for muscle. A Penrose cigaret drain is placed in the prevesical space, and the abdominal wound is stitched, using figure-of-eight silkworm gut for the skin. The catheter is irrigated in the operating room and attached to continuous closed drainage apparatus. Further irrigation is delayed for twenty-four hours, if possible.

Liquid is then released from the bag, leaving 10 to 15 cc. to hold the catheter in place. Loosened bits of oxycel gauze are washed out with sodium chloride solution.

The Coppridge catheter is replaced on the fourth day by a size 20F Foley catheter, which is left until the seventh day. The bag should contain 7 to 10 cc. of water, to prevent slipping into the prostatic bed.

Resected glands usually weigh about 55 gm. Although no lasting surgical complications have developed, transient effects may include shock, hemorrhage, hematoma, infection, incontinence, and suprapubic urinary leakage. In nearly half the cases, however, the postoperative course is uneventful.

Carbomycin for Urinary Infections

HOWARD M. TRAFTON, M.D., HOWARD E. LIND, PH.D., AND MANUEL CORREIA-BRANCO, M.D.

ENTEROCOCCAL and other urinary infections that are resistant to common antibiotics may be eliminated by carbomycin (Magnamycin hydrochloride). The agent is effective against gram-positive organisms. In early trials treatment was generally well tolerated and produced no serious reactions. Most of the 15 patients observed had failed to benefit from such drugs as sulfonamides, penicillin, streptomycin, aureomycin, chloramphenicol, and terramycin.

Bacteriologic sterility was achieved in 13 cases, including several infections caused by *Streptococcus faecalis* and a few by *Str. zymogenes, Micrococcus pyogenes* var. *aureus* or *albus,* beta-hemolytic streptococci, or *Diplococcus pneumoniae.*

Howard M. Trafton, M.D., Howard E. Lind, Ph.D., and Manuel Correia-Branco, M.D., of Brooks Hospital, Brookline, Mass., and Massachusetts Memorial Hospitals, Boston, use daily oral doses of 2 gm. for one week, given as 2 capsules four times a day. Occasionally, chronic infection associated with incurable lesions is kept asymptomatic for long intervals by less than 1 gm. daily.

In vitro bacterial sensitivity to the compound is a dependable guide to therapy, but antibiotic levels in blood and urine are so low as to be of little help in prognosis.

The treatment of urinary-tract infections with a new antibiotic—magnamycin. New England J. Med. 248:379-380, 1953.

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DIOGYN-B*	Estradiol Benzoate, U.S.P., in Sesame Oil 0.33 mg. and 1.0 mg. per cc.; in 10 cc. multiple-dose vials
ESTRONE	Estrone, U.S.P., in Aqueous Suspension 2 mg. and 5 mg. per cc.; in 10 cc. multiple-dose vials
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Medical Forum

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Billroth I Operation for Peptic Ulcer*

QUESTION: What is the best method of gastric resection for peptic ulcer?

Comment invited from
George Crile, Jr., M.D.
M. E. Steinberg, M.D.
C. H. Richardson, Jr., M.D.
Benjamin V. White, M.D.
Robert S. Smith, M.D.
Maurice J. Brown, M.D.
Harold M. Messenger, M.D.
Frank Glenn, M.D.
Charles S. Harrison, M.D.

► TO THE EDITORS: In commenting on the article by Drs. Sten Wallensten and Lars Göthman, I am struck with the excellent results which they obtained with the Billroth I operation.

Billroth I is not easy to perform in all cases of duodenal ulcer, and in the hands of less competent technicians I would think that the mortality rate of attempting to free the duodenum and anastomose it to the stump of the stomach would be considerable. As in all surgical procedures, technics are developed slowly over the years, and I do not doubt that in their hands this operation is safe. I do not believe that the procedure would be as safe in mine.

I think that the authors have made a good point in that the side effects of Billroth I operation are less than those of the various modifications of the Billroth II. I do not believe that it makes any difference which of the Billroth II modifications is employed. The incidence of dumping syndrome and of nutritional difficulties is considerable when the major portion of the stomach is removed. For this reason, we prefer to employ vagotomy routinely in the treatment of duodenal ulcer and to combine this operation with either gastroenterostomy or a small gastric resection, depending on the technical situation found at the time of operation.

When a small resection can be done without endangering the closure of the duodenal stump, certainly the chances of recurrent ulceration are diminished. Gastroenterostomy and vagotomy is extremely safe, carrying a mortality rate of less than 0.5%, but the incidence of recurrent ulceration in a three- to five-year follow-up has been about the same as that of a moderate gastric resection, two-thirds to three-fourths of the stomach, with no vagotomy—5 to 7%.

(Continued on page 142)

*Modern Medicine, Apr. 15, 1953, p. 102.

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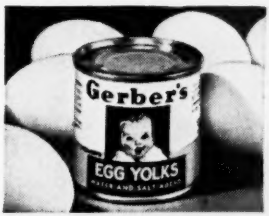

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GEORGE CRILE, JR., M.D.
Cleveland

► TO THE EDITORS: Any variation of the Billroth II operation brings about healing of a duodenal ulcer by either removal or exclusion. The Billroth I method clearly assures the patient immunity from jejunal ulcers but does not assure healing or prevent recurrence of duodenal ulcer.

Patients with postgastrectomy side effects after either of the Billroth operations are almost universally designated as mild or severe dumpers. Crippling postgastrectomy disabilities exemplary of other mechanisms than dumping are more frequent. Such disabilities result from a variety of reflux mechanisms and largely can either be prevented or eventually cured by definitive surgery *(Rev. Gastroenterol.* 18:193, 1951; *Lancet* 2:1189-1193, 1952).

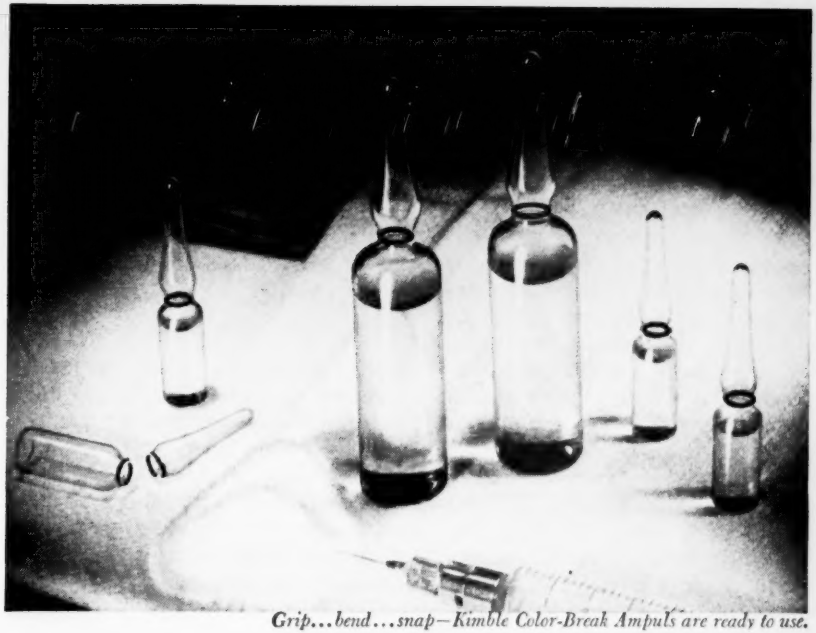
Corrective surgery by the pantaloon method for severe postgastrectomy disabilities was performed on 30 patients who had undergone 1 to 5 antecedent gastric operations. Of these patients, 27 were either completely or substantially relieved of the distressing and annoying symptoms and gained in weight.

Experience with 812 gastrectomies by the Hofmeister-Finsterer retrocolic technic and by my own pantaloon anastomosis merits the conclusion that end results were equally beneficial with the above modifications of the original Billroth II operation. This group represents all gastrectomies personally performed for duodenal, gastric, and jejunal ulcers and also for postgastrectomy syndromes. It includes 138 patients who have undergone 1 to 8 previous unsuccessful operations. The last gastroenterostomy I performed was in 1925. The overall mortality in this unselected group was 1.2%.

Drs. Wallensten and Göthman report good results with the Billroth I technic, which they consider anatomically and functionally a better operation than the Billroth II method. The appraisal of a surgical therapeutic method for ulcer can be more fittingly reduced to a logical conclusion for the surgeon on the basis of his own experience.

Wider discussion of advantages and disadvantages of both operations is precluded for lack of space. Experience with both operations, however, leads me to conclude that the Billroth II operation is more acceptable than the Billroth I.

M. E. STEINBERG, M.D.
Portland, Ore.



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► TO THE EDITORS: My present practice is to perform gastric resection for gastric ulcer and to employ a transabdominal vagotomy plus a posterior gastroenterostomy for duodenal ulcer in the usual case. In my experience, this latter procedure is equally effective in the surgical treatment of duodenal ulcer and with less morbidity and mortality. However, subtotal gastric resection is a satisfactory operation and is still used on occasion, particularly for older patients who have had recent or repeated bleeding. Sometimes the procedure is combined with vagotomy in bleeding cases.

The type of gastric resection which I prefer and which has worked best in my hands is a two-thirds to three-fourths resection of the stomach, including all the pylorus and a little of the duodenum, removing the ulcer if technically feasible and restoring continuity by a posterior Hofmeister type of anastomosis.

I think that removal of the entire antrum is very important. I like the short loop, fairly small stoma anastomosis, and believe that a 3-layer closure with a fine mucosal approximation leads to fewer complications and a smoother postoperative course. The small stoma reduces the incidence of dumping.

These patients usually regain weight slowly. Anemia has not been a problem postoperatively. The mortality should be around 2% and probably depends mainly on a good closure of the duodenal stump. The results have been excellent or good in approximately 85% of patients so treated.

I have had very little experience with the Billroth I operation, find it technically harder to perform adequately, and prefer the operation described above.

C. H. RICHARDSON, JR., M.D.
Macon, Ga.

► TO THE EDITORS: There has been a recent revival of interest in the Billroth I operation for the treatment of peptic ulcer. A discussion of this renaissance requires that duodenal ulcer and gastric ulcer be considered separately because there are fundamental differences between them.

Duodenal ulcer usually occurs in persons with excess gastric secretion of high acidity, particularly when the stomach is empty, so that hyperacidity appears to be the major etiologic factor. In gastric ulcer, the secretions are often normal, so that a local susceptibility to ulceration on the part of the mucosa appears to be of greater etiologic importance. With duodenal ulcer, therefore, it is essential to choose a type of resection which permanently lowers the quantity and acidity of the gastric juice. With gastric ulcer this may not be necessary.

The Billroth I operation is a sleeve resection of the antrum with preservation of gastroduodenal continuity. In this country, as well as in Sweden, experience is accumulating which indicates that the procedure may be excellent for the management of gastric ulcers when removal of the lesion is the primary

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goal and reduction of gastric acidity of secondary importance. The Billroth I operation is almost certainly a poor operation for duodenal ulcer, when surgery is directed primarily toward diminution of gastric secretion.

Pyloroplasty is really a limited Billroth I procedure. Some years ago there was a wave of enthusiasm for pyloroplasty in the treatment of duodenal ulcer because early results were favorable. In later years patients with this procedure had a high incidence of anastomotic complications. In all probability, the late end results will be poor in a series of patients with duodenal ulcer subjected to the Billroth I operation. It is not feasible by this method to remove enough of the acid-bearing portion of the stomach.

Subtotal gastrectomy should remain the standard type of resection for patients with duodenal ulcer. The Billroth I procedure may well make a valuable contribution to the management of gastric ulcer.

BENJAMIN V. WHITE, M.D.
Hartford, Conn.

► TO THE EDITORS: When surgery is indicated in the treatment of peptic ulcer, I believe that gastric resection by the Billroth II method is the operation of choice. This conclusion is based on the operative management of over 200 intractable and complicated cases in this category.

I favor the simplest technic which will allow a high resection of the stomach and ensure the safety of suture lines. The best all-purpose surgical approach, in my opinion, is through an upper midline abdominal incision, and the protection of wound edges by sewed-on impervious drapes has proved most effective in the prevention of wound complications.

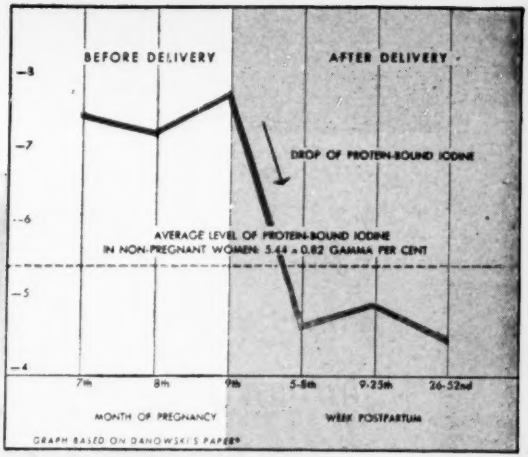
"Open" methods in dealing with the duodenal stump and in anastomosing jejunum to stomach (Hofmeister technic) avoid unnecessary devitalization of tissues yet allow perfect hemostasis. Fine chromic catgut sutures possess sufficient tensile strength for all operative procedures on the stomach and upper intestine where, with good blood supply, healing should occur rapidly.

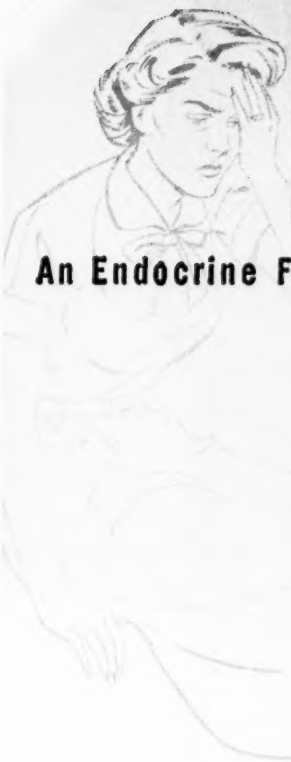
Following the technic outlined, I expect few postoperative complications and a mortality rate approaching zero. In the long view, marginal or jejunal ulcerations should be rare, since more than 75% of the stomach is removed routinely.

At the present time, symptoms characteristic of the dumping syndrome are noted in the early postoperative period in about 5% of patients and constitute the chief difficulty associated with the Billroth II gastrectomy. The dumping syndrome is a distressing situation, but fortunately tends to clear up spontaneously in time. When regurgitation of bile is persistent, the establishment of a wide anastomosis between afferent and efferent loops of jejunum, combined with vagotomy, may be very helpful.

The Billroth I gastrectomy has

(Continued on page 150)





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*Danowski, T. S., et al.: Am. J. Obst. & Gynec. 65: 77-80, 1953.

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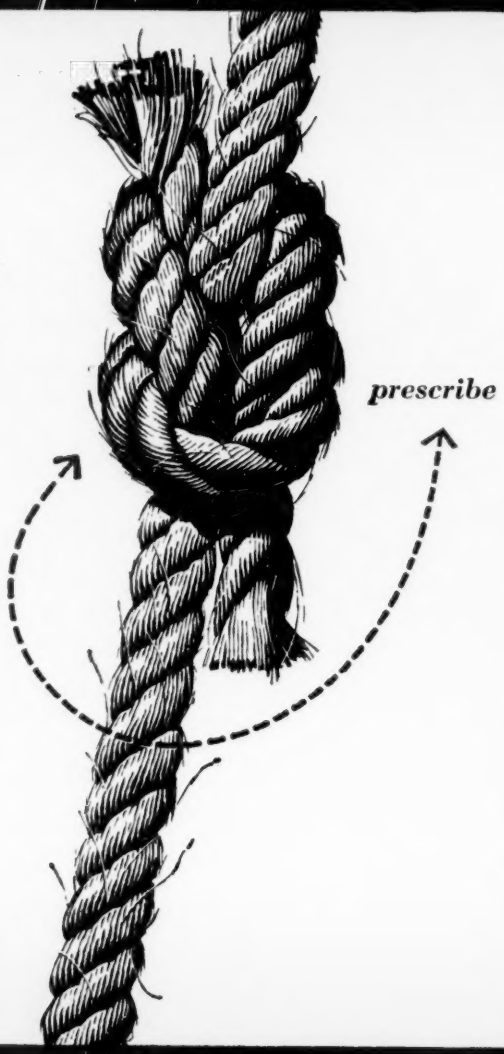

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not appealed to me because the conditions under which the stomach and duodenal stumps must be brought together after gastric resection would seem conducive either to inadequate removal of stomach or to undue tension at the suture line.

ROBERT S. SMITH, M.D.
Boise, Idaho

► TO THE EDITORS: Successful resection of peptic ulcer depends on reduction of gastric acid and control of objectionable motor activity.

Reduction of gastric acid is accomplished in several ways. The removal of the gastrin mechanism by resection of the antrum eliminates hormonal stimulus of gastric secretion. The stomach's secretory capacity is diminished by resection of the major portion of the parietal cells. In addition, neutralization through enterogastric regurgitation helps to reduce the remaining acid. The stomach should empty slowly to aid neutralization still further and to avoid the dumping syndrome.

Modifications of the Billroth II operation have fulfilled most of the requirements outlined. As Drs. Wallensten and Göthman have indicated, however, the Billroth I operation has some physiologic advantages over the Billroth II procedure. The gastric content is discharged directly into the duodenum in the Billroth I operation, and the duodenum is better equipped to receive it than the jejunum.

Although diversion of the gastric juice away from the duodenal area through the jejunum permits the ulcer to heal, the jejunal mucosa is quite susceptible to acid-pepsin erosion with the possibility of ulcer formation. The duodenum resists ulcer formation more strongly than distal portions of the bowel, and the presence of gastric content in the duodenum helps to depress gastric secretion.

The authors report excellent results from the Billroth I procedure with relatively few complications, and these compare favorably with the series studied after the Billroth II procedure. However, technical difficulties limit the use of the Billroth I operation. Higginson and Clagett find that this technic can be used only occasionally in cases of duodenal ulcer, even though it is ideal in many cases of gastric ulcer (*Surgery* 24:613-620, 1948). If an ulcer penetrates into the pancreas, and there is inflammatory reaction around it, a satisfactory Billroth I anastomosis cannot be achieved without difficulty. A very high resection is also more difficult in this type of operation.

Although the Billroth I operation has much to commend it, we feel that some modification of the Billroth II technic is the procedure of choice for most duodenal ulcers. The Billroth I operation is most effective in surgical treatment of benign gastric ulcers, providing the ulcers are not too high and the stomach is not fixed with inflammatory adhesions.

MAURICE J. BROWN, M.D.
HAROLD M. MESSENGER, M.D.
San Diego

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1. Beckman, H., and Tatum, A. L.: Wisconsin M. J. 51:185, 1952. 2. Carroll, G., and Allen, H. N.: J. Urology 55:674, 1946. 3. Kirwin, T. J., and Bridges, J. P.: Am. J. Surgery 52:477, 1941. 4. New and Nonofficial Remedies, A.M.A., 1952. 5. Scudi, J. V., and Duca, C. J.: J. Urology 61:459, 1949. 6. Scudi, J. V., and Reinhard, J. F.: J. Lab. & Clin. Med. 33:1304, 1948. 7. Duca, C. J., and Scudi, J. V.: Proc. Soc. Exper. Biol. & Med. 66:123, 1947. 8. Schloss, W. A.: Connecticut M. J. 14:994, 1950. 9. Knight, V., and others: Antibiotics & Chemotherapy 2:615, 1952.

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► TO THE EDITORS: During the five-year period 1946-50, the number of patients who underwent subtotal gastric resection for peptic ulcer at the New York Hospital–Cornell Medical Center was 413. Polya and Hofmeister procedures were used almost exclusively and are now considered the operations of choice.

The Billroth I operation has certain technical disadvantages which we believe outweigh its main advantage of continuity of gastroduodenal flow.

It is the consensus of opinion that at least two-thirds of the stomach must be removed if long-term follow-up studies are to be satisfactory. If this is done, the distance between stomach and duodenum is great, and because of this there is a tendency to compromise on the amount of stomach removed if one does a Billroth I procedure. The gap between the 2 organs seems even greater if any reaction occurs in the region of the pancreas and common duct.

The advisability of anastomosing an indurated and often friable duodenal cuff is also questioned. Frequently, simple closure of the duodenal stump is difficult if the ulcer is penetrating posteriorly into the pancreas. Attempting to join such an area with the stomach would seem hazardous.

Because of these inherent difficulties, a Billroth I should not be done unless the postoperative results are definitely superior. A comparison of results shows that this is not true.

In the series of 413 patients there were 9 deaths, a 2.2% mortality rate. Of these, 4 were caused by nonoperative complications, namely, coronary occlusion, pulmonary infarct, cerebrovascular accident, and vomiting with aspiration while returning from the operating room. Technical difficulties were responsible for 5 deaths, a 1.2% operative mortality.

Our postoperative results, both early and late, indicate that Hofmeister and Polya procedures give equally good results. We have a 95% follow-up and, of these, 95% are doing well. Approximately 2% of patients have symptoms of dumping syndrome, which contrasts with a 10% incidence following the Billroth I procedure.

It should be remembered that the complication of the dumping syndrome following a Billroth I was one of the reasons for discontinuance of the operation. Therefore, we believe that the Hofmeister and Polya procedures give as good or better results than the Billroth I operation and have none of the inherent technical difficulties.

FRANK GLENN, M.D.
CHARLES S. HARRISON, M.D.
New York City

Treatment of Acute Cholecystitis*

► TO THE EDITORS: I have read with a great deal of interest the comments by Drs. Behrend, Dumphy, Rice, Thieme, and Small in the Medical Forum discussion of acute cholecystitis *(Modern Medicine*, Apr. 1, 1953, p. 120).

*MODERN MEDICINE, Nov. 15, 1952, p. 94.

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I have been interested in this problem for the past seven or eight years and have gradually come around to advocating early operation. Treatment of acute cholecystitis in the early stages must be predicated upon the ability of the surgeon to perform the technical feat. I would certainly not advise the occasional operator to perform this surgery.

The arguments against early operation are primarily that much of the anatomy becomes distorted because of edema and swelling and that generally a greater amount of bleeding occurs. It is quite possible for an occasional operator to accidentally traumatize the common duct and thereby cause serious long-lasting complications. However, in institutions with well-trained surgeons, I feel that early operation shortens the course of the disease tremendously and saves the patient a great deal of time.

During the past five years, I have operated upon every patient with cystitis who has presented himself, regardless of age, and although the morbidity is slightly increased I have not found the degree measurably deterrent. In almost every instance, patients undergoing surgery have been out of the hospital within ten days.

When necessary, common duct explorations are done, although I am frank to admit that the small blood vessels in and around the common duct are generally dilated and the area is much more vascular than in elective cases without evidence of inflammation. However, this has been no deterrent to exploring the common duct when indicated.

I have found surgery to be most difficult when done for chronically inflamed, contracted gallbladders with deposition of abundant scar tissue and adhesions of the cystic duct or gallbladder even to the common duct. These are certainly more trying than the average case with accompanying edema which generally makes dissection of the area easier.

In general the patient is operated upon as soon as his condition is good. In a matter of hours the patient can be hydrated if he has been vomiting; a nasal gastric tube is inserted and left in, and antibiotics are given to combat infection. Under these circumstances I feel that early operation is advantageous to the patient from every viewpoint.

PHILLIP H. HALPERIN, M.D.
Kansas City, Mo.

Overfeeding in Early Infancy*

QUESTION: How frequent is overfeeding in early infancy?

Comment invited from
Norman W. Clein, M.D.
John E. Gonce, Jr., M.D.
E. H. Watson, M.D.
Bret Ratner, M.D.
Robert L. Jackson, M.D.
Milton I. Levine, M.D.

► TO THE EDITORS: Dr. Ian G. Wickes' article on overfeeding in early infancy is good practical common sense, which is what we need in infant feeding today. I

(Continued on page 160)

*MODERN MEDICINE, Apr. 15, 1953, p. 114.

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(1) Youmans, J. B., in Handbook of Nutrition, Chicago, American Medical Association, 1951, p. 577; (2) Hansen, A. E., in Mitchell-Nelson Textbook of Pediatrics, ed. 5, Philadelphia, W. B. Saunders Co., 1950, p. 106; (3) Heck, F. J.: J.A.M.A. 148: 783, 1952.

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1. McHardy and Browne: Sou. M.J. 45:1139, 1952.

2. Lorber and Shay: Fed. Proc. 12:90, 1953.

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agree with Dr. Wickes wholeheartedly.

The only symptom that I have seen from overfeeding in infants is spitting up, which usually occurs in very active babies. Some babies on demand feeding who receive a bottle every time they awake are overloaded with too frequent feedings. These babies spit up and cry a good deal because they just do not get enough rest and become tense.

Certain babies who cry frequently are fed often, take large amounts, and still cry. These infants are presumed to be suffering from overfeeding. I have found that most are allergic to cow's milk; the symptoms disappear almost at once when they are put on Mull-Soy feeding. Milk allergy in young infants is more common than generally recognized and often is mistaken for overfeeding (*Ann. Allergy* 9:195-204, 1951; *Modern Medicine*, Aug. 1, 1951, p. 72).

Adequate infant feeding should be an individual problem tailored to each child's own rate of growth and development. Some babies need more food than others. We advocate the early addition of solid foods, less milk, and fewer feedings. This results in better babies with better appetites and much less work for the mother. We also advise the mother to give the baby all the milk he will take in fifteen or twenty minutes from a bottle that contains a nipple with a large hole. Small holes in the nipples seem to cause more trouble than any other one problem in infant feeding.

We adults eat more than is needed because the food looks, smells, and tastes good and we are greedy. Babies stop when they are full. They are smarter than adults when food is involved.

NORMAN W. CLEIN, M.D.
Seattle

► TO THE EDITORS: With one notable exception, overfeeding is never a threat in the management of the artificially fed infant whose formula is reasonable.

The one exception is concerned with overfeeding of a single substance, phosphorus, and exists in the newborn period when the infant is permitted to take excessive amounts of a reasonable cow's milk mixture or is given a relatively concentrated cow's milk mixture or a proprietary infant food high in phosphorus content. Under these circumstances the high phosphorus content of the food and especially the low calcium-phosphorus ratio predispose the infant to tetany, a metabolic disturbance which does not occur in breast-fed newborn infants.

Otherwise, if the formula is suitable for the particular infant and the technic of feeding is proper, overfeeding as a cause of digestive disturbance in the young infant does not exist. The same is true in the case of the breast-fed infant and the only untoward—if it is untoward—result of the overfeeding in either case is excessive gain in weight. It is not at all uncommon for the young infant to insist on a caloric intake greatly in excess of

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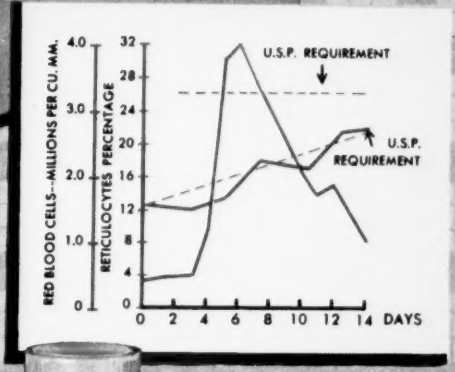
Clinical assays of Biopar, confirmed independently,[1,2] demonstrate a full reticulocyte and red blood cell response in pernicious anemia.



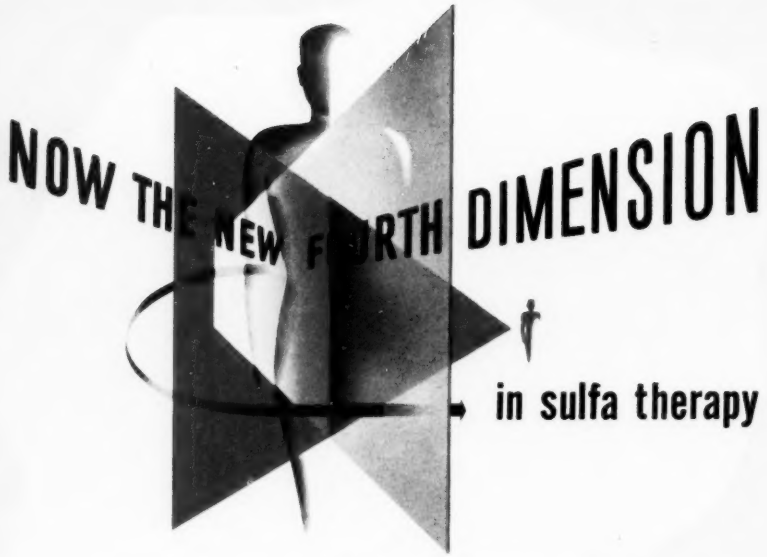
Indications: Pernicious anemia, macrocytic anemia of nutritional origin, and in other conditions where vitamin B_{12} has been indicated to be useful such as growth retardation in children, anorexia, polyneuritis, osteoarthritis and osteoporosis, diabetic neuritis, alcoholic neuritis, trigeminal neuralgia, migraine, herpes zoster.

Each BIOPAR tablet contains:
Crystalline Vitamin B_{12} U.S.P. ..... 6 mcg.
Intrinsic Factor ..... 30 mg.

Supplied: In bottles of 30 tablets.

1. DeMarsh, Q. B.: Personal Communication, 1952.
2. Limarzi, L. R.: Personal Communication, 1952.

THE ARMOUR LABORATORIES



NEW . . . A QUADRI-SULFA MIXTURE

DELTAMIDE

Deltamide—four sulfonamides for greater safety—represents the latest development in sulfonamide therapy to provide greater clinical safety with lowered incidence of toxic and allergic reactions.

Clinical trials of the four sulfonamides in Deltamide demonstrated a high degree of efficacy with low toxicity. The chocolate-flavored suspension is well accepted by patients in the younger age group.

Deltamide

Each tablet or each teaspoonful (5 cc.) of chocolate-flavored suspension contains:

Sulfadiazine	0.167 Gm.
Sulfamerazine	0.167 Gm.
Sulfamethazine	0.056 Gm.
Sulfacetamide	0.111 Gm.

Supplied:

Deltamide Tablets: Bottles of 100.
Deltamide Suspension: 4 oz. and 16 oz. bottles.

THE ARMOUR LABORATORIES
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world-wide dependability
PHYSIOLOGIC THERAPEUTICS THROUGH RESEARCH

his theoretic requirements and to complain loudly if his demand is denied.

Undue fussiness and prolonged screaming in the fundamentally normal young infant, which might be mistakenly attributed to overfeeding, are instead caused by hunger, faulty feeding technic, and improper food. In the latter instance the symptomatology would also include vomiting, colic, frequent loose stools, or constipaiton.

Introduction of the self-demand schedule, which need not be conducted beyond the age of 6 to 8 weeks or the weight of 10 to 11 lb., has done much to eliminate the screaming of young infants because of hunger. In this connection the mother must be warned that at some of the feedings the infant, especially in the evening, will want twice or more as much as he takes at his usual feedings.

Many babies do not tolerate evaporated milk mixture well and experience abdominal discomfort and increased looseness and frequency of stools. Such infants usually become quite comfortable when their formula is switched to one made with fresh or powdered, partially skimmed cow's milk.

Probably the most common fault in the technic of feeding—bottle, breast, or combined bottle and breast feeding—is prolongation of each individual feeding. In the case of the bottle-fed infant, this is practically always caused by nipple holes being too small or to a faulty adjustment in the flow-regulating device of the newer type of bottles. Correction of these mechanical difficulties combined with emphatic instructions to see that the baby gets all he wants to eat in not more than twenty minutes is followed by prompt relief from the complaints of great restlessness and crying, which are associated with prolongation of feedings.

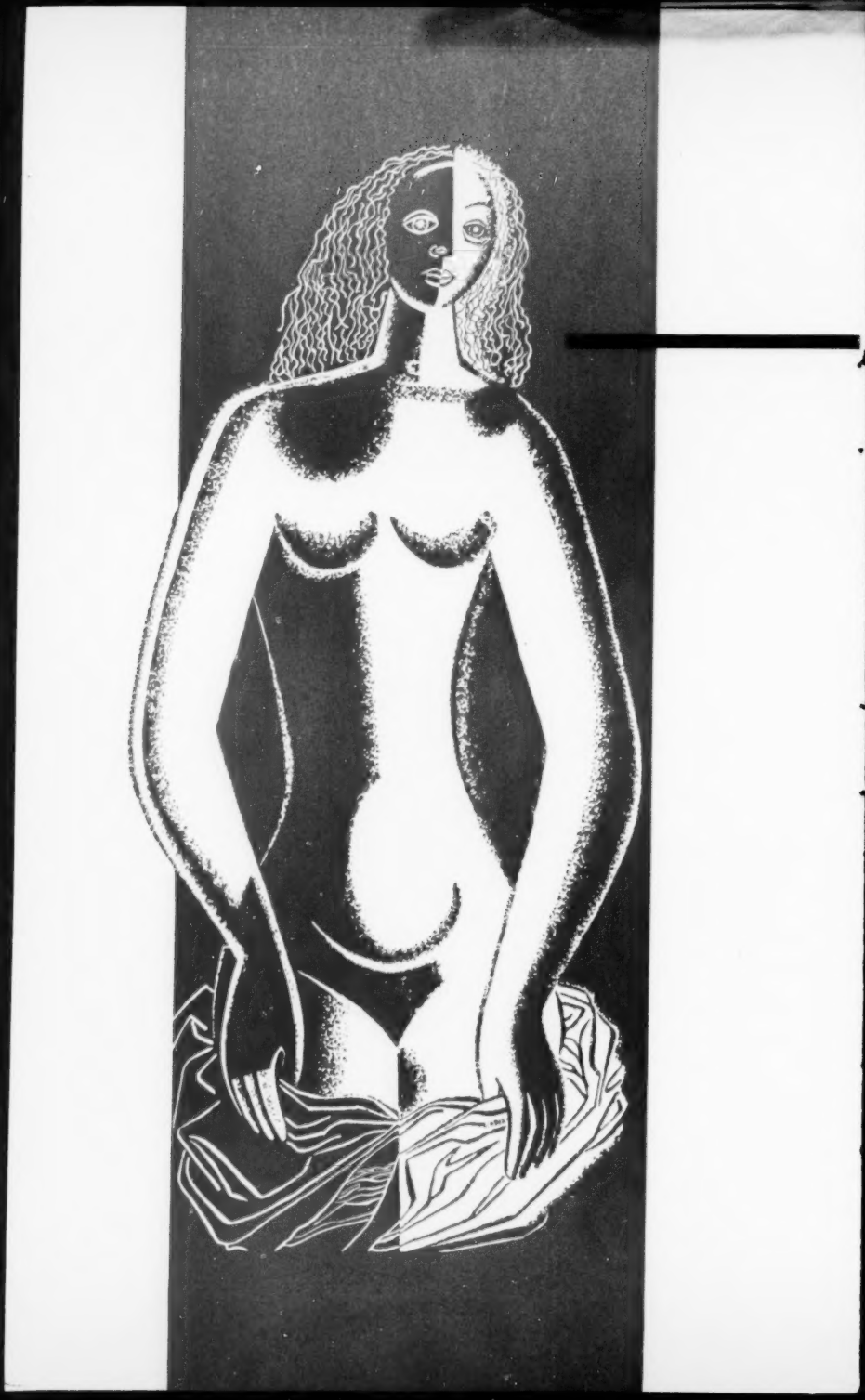
Genuine colic, which conceivably could be produced by overfeeding, actually is peculiar to certain infants in whom regulation of the feeding has little, if any, influence. Medicinal therapy is of great help while waiting upon time, usually three months, to effect a cure.

JOHN E. GONCE, JR., M.D.
Madison, Wis.

► TO THE EDITORS: It is amazing how many formerly well-established opinions on infant feeding have been changed in the past twenty years. Dr. Wickes states very clearly the present pediatric viewpoint on infant feeding, particularly that danger of overfeeding has been greatly overstressed.

I believe that the healthy infant will not overfeed; or if he does take more than he can comfortably hold he will spit up, not vomit, the excess. A few healthy infants take more than is comfortably held and spit up small amounts. A mother frequently calmly informs us that the baby spits up when given more than a certain amount so she has reduced the feeding a little. Since we no longer scare mothers about overfeeding—or about underfeeding—they often make the commonsense adjustments needed.

(Continued on page 164)



New orally effective agent

for functional uterine bleeding

Blutene

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CHLORIDE-SULFATE

(TOLONIUM CHLORIDE-SULFATE, ABBOTT)

WITH the introduction of BLUTENE, a long-researched, oral, *nonhormonal* technique has at last become available for the management of functional uterine bleeding (menometrorrhagia).*

a new concept

Antihemorrhagic in effect, BLUTENE bears no structural resemblance to any existing antimenorrhagic medication. One 100-mg. tablet taken with each meal at the time of bleeding will relieve symptoms in many patients, frequently within one course of treatment.

recurrence infrequent

Lathrop and Carlisle[1] have reported on the use of BLUTENE in 63 cases of hypermenorrhea. Results were "good" in 45 patients, "fair" in 15. *Only two patients in the "good" group later experienced persistent recurrence.* When menorrhagic symptoms do recur, they are often promptly controlled with an additional course of BLUTENE.

well tolerated

Various investigators[1,2,3] have noted that side effects from BLUTENE are transient or relatively minor in nature. Occasional nausea, tenesmus, or burning on urination are usually relieved by increased water intake, or decreased dosage, or both. In many cases, side reactions are entirely absent.

BLUTENE often succeeds where other forms of therapy have failed. Write today for literature. In sugar-coated tablets, 100-mg., bottles of 25 and 100.
Abbott Laboratories, North Chicago, Ill. Abbott

***Important:** BLUTENE *should be used only after adequate gynecologic examination has ruled out organic disease as the cause of bleeding.*

1. *Lathrop, C. A., and Carlisle, W. T., Oral Toluidine Blue in the Treatment of Hypermenorrhea, Amer. J. Obst. & Gynec., 64:1376, December, 1952.*
2. *Rumbolz, W. L., Moon, C. F., and Nocelli, J. C., Use of Protamine Sulfate and Toluidine Blue for Abnormal Uterine Bleeding, Amer. J. Obst. & Gynec., 63:1029, May, 1952.*
3. *Bickers, W., Toluidine Blue—An Evaluation in the Treatment of Uterine Bleeding, in press, Amer. J. Obst. & Gynec.*

1-225

A sick child seldom overfeeds, but may do so. A feverish child may be so thirsty that cool milk is eagerly accepted.

I am sure that Dr. Wickes meant only to expose the fallacy, formerly much emphasized, that healthy babies may make themselves ill by overfeeding. His statements concerning calories per pound per day and average daily weight gain are equally pertinent. It must have come as a great shock to many physicians whose professional life bridges the change from rigid schedule to self-demand feeding practices to learn that a month-old child may take formula at the rate of 70 or 80 calories per pound per day and gain as much as 1½ or even 2 oz. a day for short periods.

I try to reassure the new mother with her first child that he has many "built in" safety mechanisms and that he will come along in excellent style if she will follow a few simple common-sense principles, one of which is that the baby can be permitted as much breast milk or formula as he wants. Pediatricians have known for many years that the breast-fed infant of a month or so of age might take 8 to 10 oz. or more at a single feeding. Even so, we continued until recently to prescribe formulas giving an infant of this age not more than 4½ or 5 oz. per feeding.

What would have formerly been considered gross overfeeding will often cure colic, the chief cause of which is, in my opinion, air swallowed by a crying hungry infant.

E. H. WATSON, M.D.
Ann Arbor, Mich.

► TO THE EDITORS: Perhaps Dr. Wickes is correct in assuming that the diagnosis of overfeeding in early infancy is rarely justified. However, the condition is a real diagnostic problem.

It is true that nature has provided a stopgap in overfeeding, namely that of vomiting. Few children who vomit readily can ever be truly overfed. However, those infants who take all the food given them and retain it present the serious problem.

A number of years ago I was called in to see a 7-month-old infant who had dyspnea and was diagnosed as suffering from acidosis. The child was apparently seriously ill—extremely lackadaisical, with slight convulsive movements. The one thing that struck me was the adiposity of the infant. I learned that the infant had gained about 2½ oz. a day for the past few weeks.

Another striking feature was the voluminous stools. They were extremely pale in color and came out in large undigested form in perfectly huge amounts.

Questioning as to diet revealed that this baby had been given 8 tbs. of cereal twice a day for the past month. The therapy was quite evident, with prompt relief of dyspnea and somnolence.

I have seen 1 child who had convulsions and 2 children with hyperpyrexia and convulsive movements which we attributed to overfeeding. I have also had 3 instances of overfeeding in infants which led to the erroneous diagnosis of asthma and which were

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increases the usefulness of oral aminophylline

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This is possible with AMINODROX because gastric disturbance is avoided.

How congestive heart failure, bronchial and cardiac asthma, status asthmaticus and paroxysmal dyspnea can be treated successfully with *oral* aminophylline in the form of AMINODROX.

Aminodrox Tablets contain 1 1/2 gr. aminophylline with 2 gr. activated aluminum hydroxide.

Aminodrox-Forte Tablets contain 3 gr. aminophylline with 4 gr. activated aluminum hydroxide.

Also available with 1/4 gr. phenobarbital.

relieved by a marked reduction in intake.

Finally, overfeeding, particularly if many new foods are introduced, in many instances leads to true allergic eczema or urticaria.

Perhaps the condition is rare, but I believe that a true diagnosis of overfeeding can be made. This is fully justified by the prompt relief of symptoms when the intake of food is reduced.

BRET RATNER, M.D.
New York City

► TO THE EDITORS: Overfeeding young infants with human or properly modified cow's milk is uncommon and, when it does occur, is not a serious problem.

Occasionally a mother has an abundant supply of milk; the infant gorges himself and promptly regurgitates after nursing. This does no harm to the infant but is inconvenient for the mother. The simple remedy is to limit the time of nursing, allowing the infant to suckle only one breast at a feeding which may require only five to ten minutes. The most common cause of crying after nursing at the breast is inadequate intake.

Regurgitation also may result from overfeeding a suitable formula, but this does not harm the infant and is easily corrected by decreasing the amount given at each feeding and increasing the number of feedings.

Not infrequently young infants are fed too concentrated evaporated milk formulas; this results in regurgitation and milk diarrhea. Feeding an unsuitable milk mixture can harm the infant, and the degree of disturbance will depend on the infant's age and tolerance, the length of time the formula is fed, and how unsuitable the mixture is.

Regurgitation and vomiting that are caused by overfeeding can be diagnosed from the history of the type of feeding being offered and knowledge of what constitutes an adequate formula. The obvious remedy is to offer the baby a suitable milk mixture.

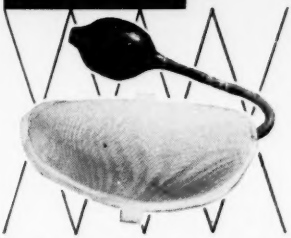
Crying and colic are common symptoms in the first three months of life. The term colic is used to describe any form of paroxysmal abdominal pain. One of the chief reasons for the frequency of colic during the early months is that the food requirement approaches more closely the tolerance for food than later, and indigestion is more easily induced. Painful peristaltic contractions may be the result of indigestion, intestinal distention, irritation, hunger, exposure to cold, food allergy, or overstimulation. Careful clinical differentiation must be made.

Overdosage with fat-soluble vitamins A and D can and does occur and should be avoided. Concentrated water-soluble preparations of vitamins A and D are prescribed frequently. Maximum calcium and phosphorus retentions are obtained with 300 to 400 units of vitamin D daily. Not only are retentions no greater with any larger amount, but with the use of 1,800 units or more daily for several months, ap-

(Continued on page 170)

for postural hypotension
Glenard's syndrome
and all cases of emphysema

CAMP DIAPHRAGMATIC SUPPORTS



The Camp Inflatable Pad for the Camp Diaphragmatic support contains a steel plate on the belt side so that all pressure is directed inward. The patient can easily control the pressure by means of the valve and a small detachable bulb. The lower edge of the pad comes just above the symphysis pubis; the top falls below the umbilicus.

The following recommendations are made in their new book, CHRONIC PULMONARY EMPHYSEMA. PHYSIOPATHOLOGY AND TREATMENT.*

"There are many types of abdominal supports (emphysema belts) intended to provide the abdominal compression necessary for elevating the diaphragm to the normal expiratory level. They should be designed to direct pressure inward and upward and also to provide the necessary support for the abdominal wall. The normal diaphragmatic arch may be restored by wearing a snug abdominal support, which should not be too tight and should be worn only during the day. Some relief of respiratory symptoms may be noted in many patients. Some use the Burgess-Gordon two band belt, and others use the Camp emphysema belt with inflatable pressure pad or similar apparatus."

*Segal, M. S., M. D.; and Dulfano, M. J., M. D. Chronic Pulmonary Emphysema. Physiopathology and Treatment. Grune and Stratton, Inc., page 151, April 15, 1953.

Fluoroscopy of patients wearing a Camp double back adjustment diaphragmatic support shows that it raises the diaphragm toward its expiratory position and helps support it in a dome shape.

CAMP Diaphragmatic Supports are immediately available at your local authorized Camp dealer . . . at a price within the reach of your patients.

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The ability to relieve pain

..."is among the greatest attributes of the physician"[1]

—and by all odds pain is the most common complaint for which patients consult physicians.

To give the physician a wider range of attack on pain, a new analgesic has been combined with the "intermediate" sedative, Butisol, and the widely prescribed sympathomimetic, Syndrox, in—

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TRADEMARK

A Triple Approach to Pain Control

Algoson acts by:

1· reducing perception of pain—through the new analgesic, acetyl-p-aminophenol (250 mg. per tablet), which acts chiefly on the thalamus.

2· reducing responsiveness to pain—through Butisol® Sodium (7.5 mg. per tablet)—"intermediate" sedative with mild, prolonged action.

3· reducing reaction to pain—through Syndrox® Hydrochloride (1.25 mg. per tablet). Syndrox promotes a feeling of well-being, in keeping with the dictum that "emotionally depressed patients do not respond to analgesics as well as euphoric patients."[2]

Algoson—may we send you a clinical supply of this valuable new prescription product for relief? If so, please let us know. Supplied in bottles of 100 and 1000 tablets (orange-colored), imprinted 'McNeil.'

1. Hammes, E. M.: Pain Relieving Drugs, The Journal Lancet, 72:67 (Feb.) 1952.
2. Rehfuss, M. E.; Albrecht, F. K. and Price, A. H.: Practical Therapeutics, Baltimore, Williams & Wilkins Company, 1948, p. 128.

petite is decreased and, as a consequence, total retentions of calcium and phosphorus are decreased and linear growth is slowed.

Amounts of vitamin A equivalent to 5 times the vitamin D dosage may be added to the vitamin A content of the feeding with impunity as far as the effect on growth, development, or appetite of the infant is concerned. The mother must be cautioned when using concentrated vitamin A and D preparations to use only the number of drops prescribed, as there is a tendency for them to believe that if a little is good more would be better. Overfeeding of the fat-soluble vitamins D and A is one of the most common errors of infant feeding today. Instances of hypervitaminosis A and D are encountered with ever increasing frequency.

ROBERT L. JACKSON, M.D.
Iowa City

► TO THE EDITORS: My own experience, in both private and hospital practice, coincides with that of Dr. Ian G. Wickes: overfeeding is an extremely rare occurrence today.

Certainly quantitative overfeeding is practically unheard of, especially since mothers have been given more relaxed directives about infant feeding. Qualitative overfeeding does occasionally occur with resulting vomiting or diarrhea, but the upsets are usually very mild and adjustments may be made with ease.

When we realize, through daily observations, the infant's wide span of toleration for formula concentration, it is difficult to believe that overfeeding could ever have been responsible for the extremely detrimental results formerly ascribed to it. It is possible that in former years the effects of many conditions, not well understood, such as infectious diarrhea, celiac disease, and food allergies, were ascribed to overfeeding. Certainly today there are no fatalities from this condition.

Pediatric textbooks published twenty or thirty years ago devoted considerable space to the subject of overfeeding in infants. However, modern American textbooks devote little space to the condition and do not present the situation as frequent or serious. In general, they agree with the contentions of Dr. Wickes.

MILTON I. LEVINE, M.D.
New York City

"You can go home tomorrow—if you want to, that is."

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Almay Hypo-allergenic Preparations are cosmetically elegant beauty aids for all types of skins, even the most sensitive.

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—creamy, virtually non-irritating and non-drying, with "Stay-Tru" indelibility. In nine shades, with indelible dye scented or unscented. Also for those supersensitive to even ultra-purified indelible dye, Almay has a splendid non-indelible lipstick, unscented only.

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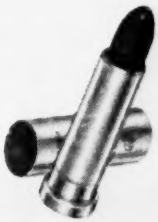

Some questions about may have occurred

and their answers by

Q: What materials are used in cigarette filters?

A: Until just recently, cellulose, cotton or crepe paper were the only materials used in cigarette filters.

Now, after long search and countless experiments, KENT's "Micronite"* Filter has been developed. It employs the same filtering material used in atomic energy plants to purify the air of minute radio-active particles.

Q: How effective are these cigarette filters?

A: Scientific measurements have proved that cellulose, cotton or crepe paper filters do not take out a really effective amount of nicotine and tars.

However, these same tests also have proved that KENT's exclusive Micronite Filter *approaches 7 times the efficiency of other filters in the removal of tars and nicotine* and is virtually twice as effective as the next most efficient cigarette filter.

Q: Do physiological reactions to filter cigarettes differ?

A: The drop in skin temperature occurring at the finger tip induced by filtered cigarette smoke was measured according to well-established procedures.

For conventional filter cigarettes, the drop was over 6

filter cigarettes that to you, Doctor

the makers of Kent

degrees. For KENT's Micronite Filter, there was no appreciable drop.

Q: Does an effective cigarette filter also remove the flavor?

A: KENT's Micronite Filter . . . the first cigarette filter that really works . . . lets smokers enjoy the full pleasure of a really fine cigarette, yet gives them the greatest protection ever from tars and nicotine.

In less than a year's time, the new KENT has become so popular it outsells brands that have been on the market for years.

takes out up to 7 times more nicotine and tars —leaves in full, rich tobacco flavor.

LATE REPORTS *from Medical Centers*

★ UNIVERSITY OF WISCONSIN, Madison--Cobalt is essential to some plants as well as animals, and the need may be general throughout the vegetable kingdom. When nitrogen-fixing blue-green algae were cultured by Dr. Osmund Holm-Hansen and associates, lack of cobalt in media interfered with cellular growth and decreased nitrogen and chlorophyll content. However, the cobalt requirement was minute, measured in parts per trillion, in contrast to parts per million for boron and manganese.

★ UNIVERSITY OF CALIFORNIA, San Francisco--Turkeys, as well as parakeets, pigeons, chickens, and ducks may transmit psittacosis. The virus was responsible for illness of 63 and death of 4 employees at Texas poultry-dressing plants. Tracing the epidemic to farms, Drs. Karl F. Meyer and Bernice Eddie found the organism in turkeys to be highly virulent and infective.

★ UNIVERSITY OF MICHIGAN, Ann Arbor--Premature babies and children with cancer excrete the same abnormal compounds, seemingly by-products of low oxygen metabolism. When identified, the chemicals may provide new tests for carcinoma or explain high premature mortality, believe Dr. James L. Wilson and associates.

★ WEST LOS ANGELES VETERANS ADMINISTRATION CENTER AND UNIVERSITY OF CALIFORNIA--Spinal lesions such as cancer and slipped disk are quickly shown by injection of radioactive iodinated human serum albumin. Drs. Franz K. Bauer and Eric T. Yuhl use a scintillation counter, which activates an electronic stylus to sketch the vertebral column. Technical errors appear at once, since the area surveyed is visible during the procedure. The injected dose is harmless and hence is not withdrawn.

★ MEMORIAL CENTER FOR CANCER AND ALLIED DISEASES, New York City--Advanced metastatic cancer of the liver can be irradiated without harm to sound tissue. Applying total doses, front and back, of 2,000 to 2,750 r with 1,000,000-volt equipment, Dr. Ralph Phillips and associates report temporary relief of distention, pain, and other symptoms in 28 of 36 cases. Livers occasionally shrank, and function improved in 22 instances. Benefits lasted two to seven months.

★ UNIVERSITY OF CALIFORNIA AT LOS ANGELES--Unusual symptoms of a virus disease may indicate that the virus has undergone actual mutation. Changes of obvious and obscure types were observed by Dr. Samuel G. Wildman and associates in 8 strains causing tobacco mosaic, 4 inducing local and 4 systemic infection. In some cases radically different physical and chemical traits appeared in virus molecules, in other instances mutation was shown only by new effects on the plant.

★ HOWARD UNIVERSITY, Washington, D. C.--Hydroxyethyl sulfone is effective against tuberculosis, either with streptomycin or as a substitute when bacterial resistance develops. Dr. Howard M. Payne and associates obtained better results in 57 patients from combined therapy than in equivalent groups given streptomycin alone or with sodium PAS.

★ UNIVERSITY OF CALIFORNIA, Berkeley--A novel method of vaccination against brucellosis in sheep and goats takes advantage of bacterial resistance to an antibiotic. The technic may be applicable to other types of infection. Dr. Sanford Elberg and Mendel Herzberg developed a strain of Brucella melitensis that depended on streptomycin for growth. Live organisms were injected with the drug, which was then withdrawn to control strength of the dose. Goats and other animals were immunized without acquiring disease.

"Doctor, which do you see most?—

...T.V.V.—*or mixed or non-specific vaginal infections?*"

If you prescribe AVC Improved routinely for vaginitis, the question is academic.

AVC is specific for T.V.V., and since it is both bactericidal and fungicidal, AVC is also exceptionally effective in moniliasis as well as in mixed and non-specific bacterial infections.

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IN VAGINITIS...

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ALLANTOMIDE VAGINAL CREAM WITH 9-AMINOACRIDINE

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AVC Improved is trichomonicidal, bactericidal and fungicidal—an exceptionally valuable agent in the treatment of vaginitis due to mixed infections (including certain fungi), Gram-positive cocci, Gram-positive and Gram-negative bacilli, anaerobic organisms.

The widespread use of AVC in clinical practice attests not only to its therapeutic effectiveness but to its pharmaceutical elegance as well. Physicians and patients appreciate the fact that a wide range of vaginal infections can be readily controlled with AVC —a non-staining, deodorizing, soothing cream.

AVC Improved is supplied in 4-oz. tubes, with or without the convenient, newly developed plastic applicator.

FORMULA:

9-Aminoacridine HCl	0.2%
Sulfanilamide	15.0%
Allantoin	2.0%

with lactose in a water-miscible base, buffered with lactic acid to pH 4.5

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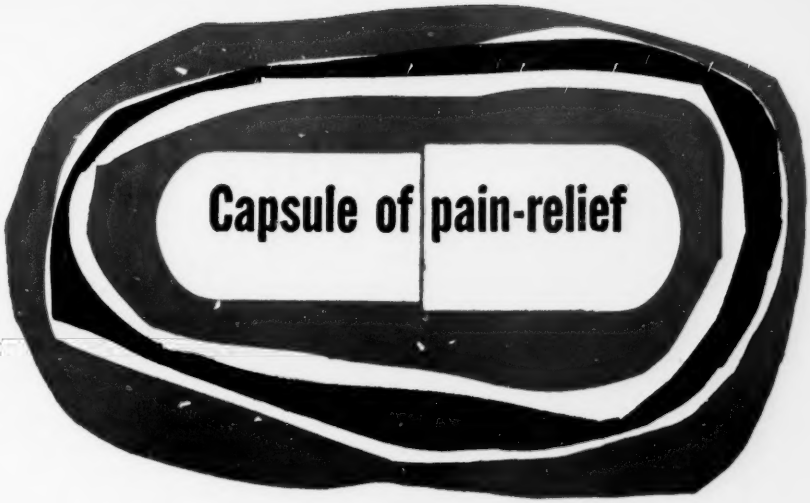

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Diagnostix

Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.

Case MM-247

PART I

ATTENDING M.D: A 58-year-old critically ill woman on the medical ward is a diagnostic dilemma. Eighteen years ago she was found to have an adenocarcinoma of the uterus, established by biopsy and treated with intrauterine radium. Fourteen years ago uterine bleedings recurred, residual carcinoma was found, and panhysterectomy was done. She was obese and had had diabetes for several years before the carcinoma. She was admitted to this hospital two weeks ago with a severe sharp stabbing pain in the left side of the chest, radiating along the ninth rib from the breast to the subscapular area.

VISITING M.D: How long had she had the present pain?

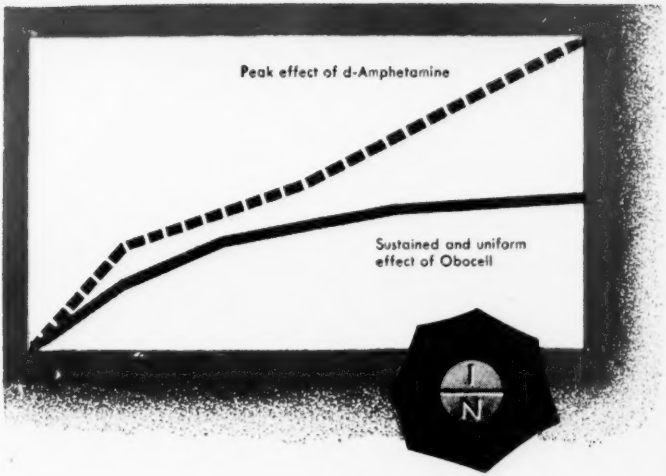
ATTENDING M.D: It began slowly about two weeks before hospitalization and was accentuated by body movement, inspiration, and cough from the start. The pain has become worse and is now excruciating on the slightest movement; the patient can hardly sit up in bed, even talking is painful. She requires narcotics; paravertebral or intercostal blocks give temporary relief.

VISITING M.D: Any fever?

ATTENDING M.D: Yes. A week before hospitalization she had daily fever as high as 102° F.; with penicillin the fever subsided but the pain persisted. There is polyuria, polydipsia, and orange sugar reaction of the urine.

VISITING M.D: Am I correct in summarizing the story as follows: This woman had a malignant uterine tumor, apparently slow growing, as indicated by the four-year interval between radium therapy and surgery; subsequently she has had no recurrence. Diabetes has been a constant, presumably difficult management problem, and now she has a febrile illness of short duration characterized by severe chest pain on the left side, localized to the ninth rib region?

ATTENDING M.D: Correct. You are



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Nicel*.....150 mg.
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Supplied: Bottles of 100, 500, 1000 tablets.

*Irwin-Neisler's Brand of High Viscosity Methylcellulose.

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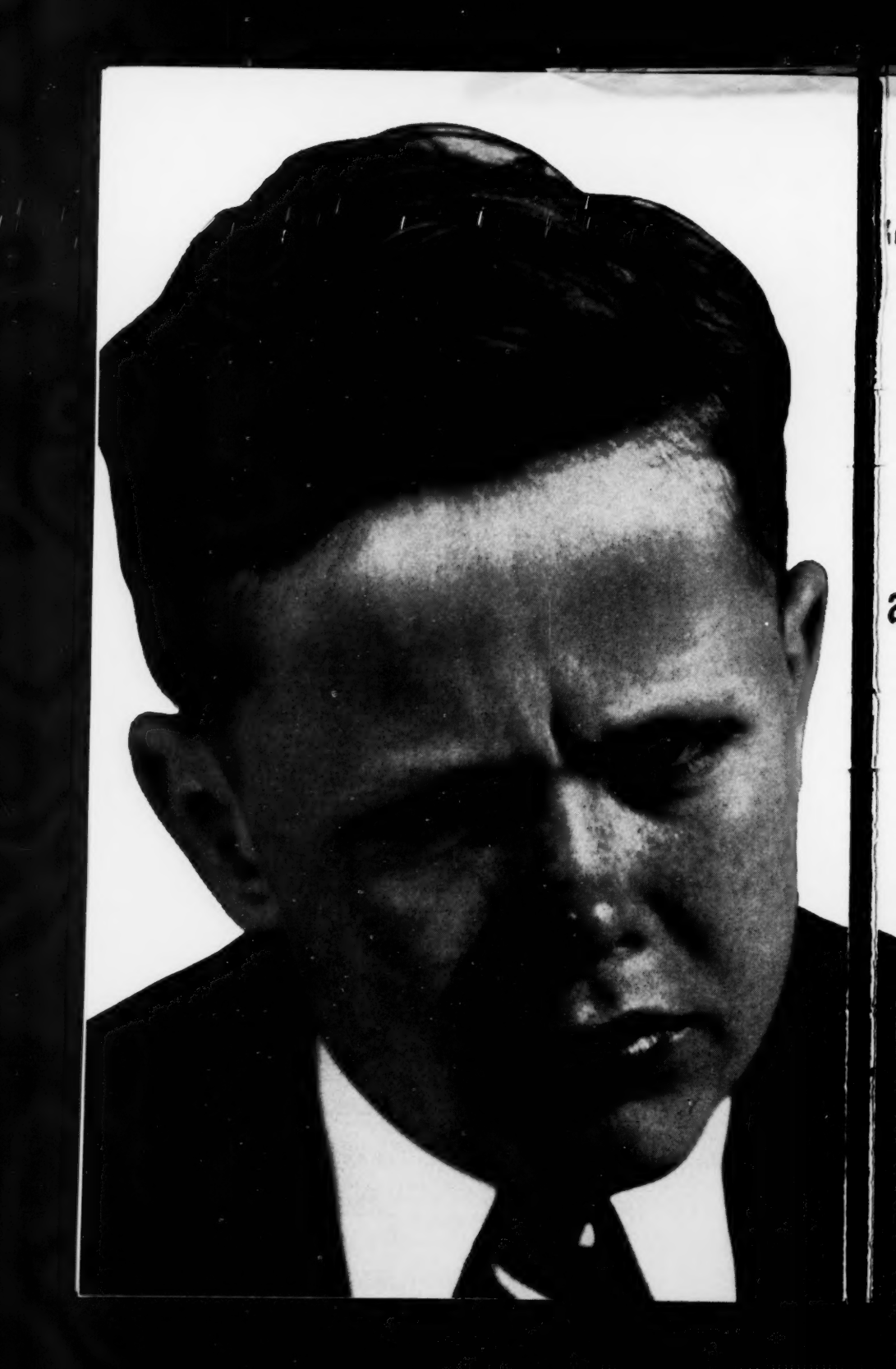

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And it's true, doctor. Pomalin's fast-working, water-binding action gives your patients firm stools quickly ... easily. And taste! — all the kiddies go for Pomalin's tongue-tempting, apple-like flavor.

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Pectin, N.F.	1.5%
Kaolin (medicinal grade)	20.0%

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right in surmising that the diabetes has been controlled with difficulty.

PART II

VISITING M.D: *(Entering patient's room)* Please give me the details of the diabetes.

ATTENDING M.D: After surgery the condition was reasonably well controlled by 20 units of protamine zinc insulin, but after a year the requirements began to increase steadily. There were bouts of cellulitis and furunculosis, twice requiring hospitalization. The diabetes has been reasonably well controlled for the past four years by 70 to 80 units of protamine zinc insulin and 50 to 60 units of regular insulin.

VISITING M.D: *(Examining patient with difficulty because of great pain)* The left chest is extremely tender to superficial palpation in the area you described. There are no skin lesions, masses, or nodules. There are some moist râles in both lung bases; the heart and abdomen are negative by physical examination. The dorsalis pedis pulse is palpable bilaterally. Vibration sense is diminished; ankle jerks are reduced but present on reinforcement. I wonder . . .

ATTENDING M.D: I think she has diabetic neuropathy. The spinal fluid examination shows a protein of 80 mg. per 100 cc., is otherwise normal. Now . . .

VISITING M.D: You're getting ahead of the story. Save the laboratory findings until after we have completely reviewed the history and the physical examination. I have never seen such severe pain with diabetic neuropathy.

ATTENDING M.D: It's possible.

VISITING M.D: Anything is, but we must first deal with what is probable. *(Continuing examination)* Pelvic and rectal examinations are negative as far as I can tell. I believe that there is a fluid level on the left side of the chest, but can't be sure because of the acute distress. The slight neurologic findings may occur with older people, especially diabetics, and not be too significant. The spinal fluid protein is hard to understand. Perhaps now we can go on to the laboratory findings.

PART III

ATTENDING M.D: White cell count is 18,000 with 85% neutrophils, and the sedimentation rate of erythrocytes is 60 mm. in one hour. Fasting blood sugar is 240 mg. and urine specific gravity is 1.020, 2 plus albumin reaction, positive sugar and acetone, and . . .

VISITING M.D: I think you should tell me about the roentgenogram.

ATTENDING M.D: A chest film made a full year ago was negative. Another made on admission revealed an elevation of the diaphragm, a small amount of fluid on the left side. There are linear densities in both lung fields, which have become more sharply defined in subsequent pictures. Thoracic spine and rib pictures are normal. We found no destruction or fracture. Heart looks normal.

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VISITING M.D: *(Holding films up to window)* These look like infarctions, though of course they could be atelectasis. With fluid, differential diagnosis isn't easy. What did the chest fluid show?

ATTENDING M.D: White cell count of 15,000 per cubic millimeter; 4,000 were white cells; specific gravity was 1.017. About 300 cc. was removed at the first tap, but no fluid was obtained two days later.

VISITING M.D: *(Reviewing films)* There was fluid at this date.

ATTENDING M.D: Yes. Smears of the fluid with Ziehl-Neelsen and Gram stains were negative. Cultures of the fluid were negative. Blood cultures were also negative. Sputum grew abundant *Staphylococcus aureus.*

VISITING M.D: *(Looking through chart)* And the enormous amount of additional laboratory findings does not throw any further light. Electrocardiogram, serologic reactions, et cetera, et cetera, are normal. The elevated spinal fluid protein does not explain the situation, being probably part of the diabetic picture, but should be repeated. I think . . .

PART IV

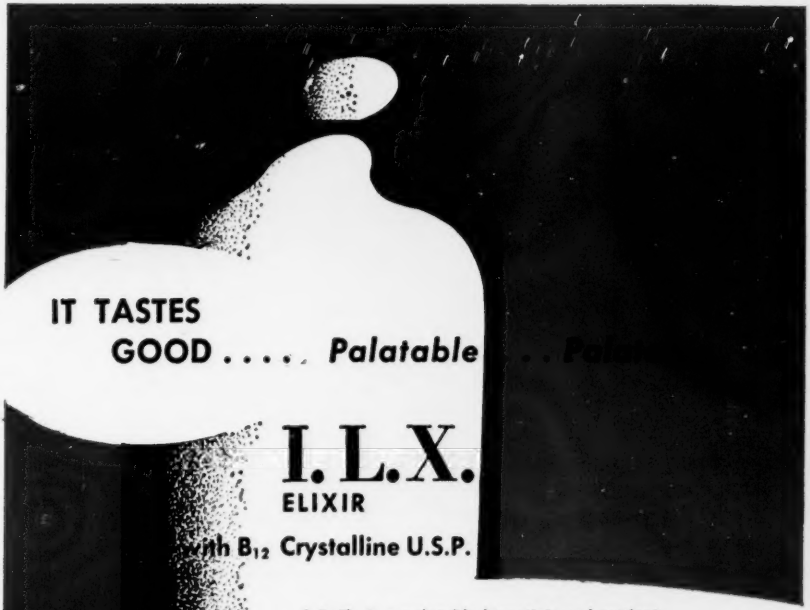
VISITING M.D: *(Continuing)* . . . that the pain originates in the ninth rib. Metastatic malignant disease would be the first likelihood, then infection. Yet I doubt if this unremitting pain along the ninth rib is caused by the old carcinoma. The eighteen-year interval, the fever and rapid critical course, the absence of detectable local recurrence or evidence of a second malignant process elsewhere, all lead me to exclude this possibility. The negative electrocardiogram is against coronary infarction.

ATTENDING M.D: What about pulmonary infarction?

VISITING M.D: Well, it hardly seems likely that such agonizing pain—which certainly occurs with pulmonary infarction—would have lasted several weeks in spite of various measures, including nerve block. The clue which I cannot shake is the prolonged severe diabetes, the febrile fulminating illness. She did respond to penicillin at first, and I am inclined to speculate on the possibility of an initial pneumonia, that we are now seeing a widespread infection not recognized or treated adequately. I should hazard the guess that there is an infection in the left chest wall with secondary pleural effusions.

ATTENDING M.D: How do you

"That's correct—Allen. A as in Arteriosclerosis, L as in Leptospirosis . . ."



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Iron and Ammonium Citrate	18 grs.
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Nicotinamide	20 mgs.
Vitamin B_{12} Crystalline U.S.P.	20 micrograms

*MDR — Minimum Daily Requirement

DOSAGE: As a hematinic and nutrient tonic 1 to 3 teaspoonfuls daily. For maintenance in pernicious anemia 2 tablespoonfuls daily.

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account for the sterile fluid?

VISITING M.D: The catch is that fluid remained, yet you got a dry tap. Why? Presumably because there is a loculated empyema adjacent to the chest wall infection. The *Staph. aureus* probably represents the real infecting pulmonary organism.

ATTENDING M.D: Where is the source of the staphylococci?

VISITING M.D: I don't know. I would treat her most intensely with antibiotics and . . .

PART V

PATHOLOGIST: *(One week later in autopsy room)* Despite intensive therapy the patient became stuporous, lapsed into coma, and died this morning. There are numerous abscesses in the left chest wall. The largest one is over the ninth rib and the abscesses are honeycombed with tracts. There is a communicating loculated empyema, just as the consultant suggested. There seems to be an organized focal pneumonia, with extensive atelectasis and hydrothorax bilaterally. I suppose the original infection was the pneumonia, then came the empyema, and then the abscess. We are getting cultures, but whether they will show *Staph. aureus* is problematic because of the large dosage of antibiotics. Great caution must be used in making the diagnosis of diabetic neuropathy.

VISITING M.D: Any evidence of the old malignancy?

PATHOLOGIST: Nothing by gross examination. The infection was enough to account for the terminal illness.

Doctor to Doctor

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The Sept. 15 winner is

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BASIC SCIENCE *Briefs*

Oncology

Thyroid Tumors and Iodine

Inadequate intake of iodine induces the release of excessive amounts of pituitary thyrotropic hormone in rats, resulting in overstimulation of the thyroid gland. Drs. A. A. Axelrad and C. P. Leblond of McGill University, Montreal, find that prolongation of such activity in female Sherman rats fed a low-iodine diet without the addition of carcinogens is followed by the appearance of neoplasms. The following types of tumor develop: hyperplastic follicles, focal transformations consisting of cysts and tubules lined by basophilic cells, and solid masses of lightly-staining elements showing histologic evidences of malignancy.

Proc. Am. A. Cancer Research 1:2, 1953.

Pathology

Age Factor and Tumor Development

The tendency of radioactive iodine to induce hypophyseal enlargement and tumor formation in mice diminishes as the age at the time of administration increases. In 1- and 6-month-old animals given intraperitoneal injections of I^{131} in doses of 18 to 35 microcuries per gram of body weight, Drs. Martin Silberberg and Ruth Silberberg of Washington University, St. Louis, find that glandular changes are first evident six months later. The total incidence in the younger series was 91.1% in the males and 84.7% in the females. In males of the older group, incidence was only 25%. Of these structural changes, 42.9% were neoplasms and 57.1% were merely slight enlargements. No thyroid tissue was found at necropsy in animals with or without pituitary lesions.

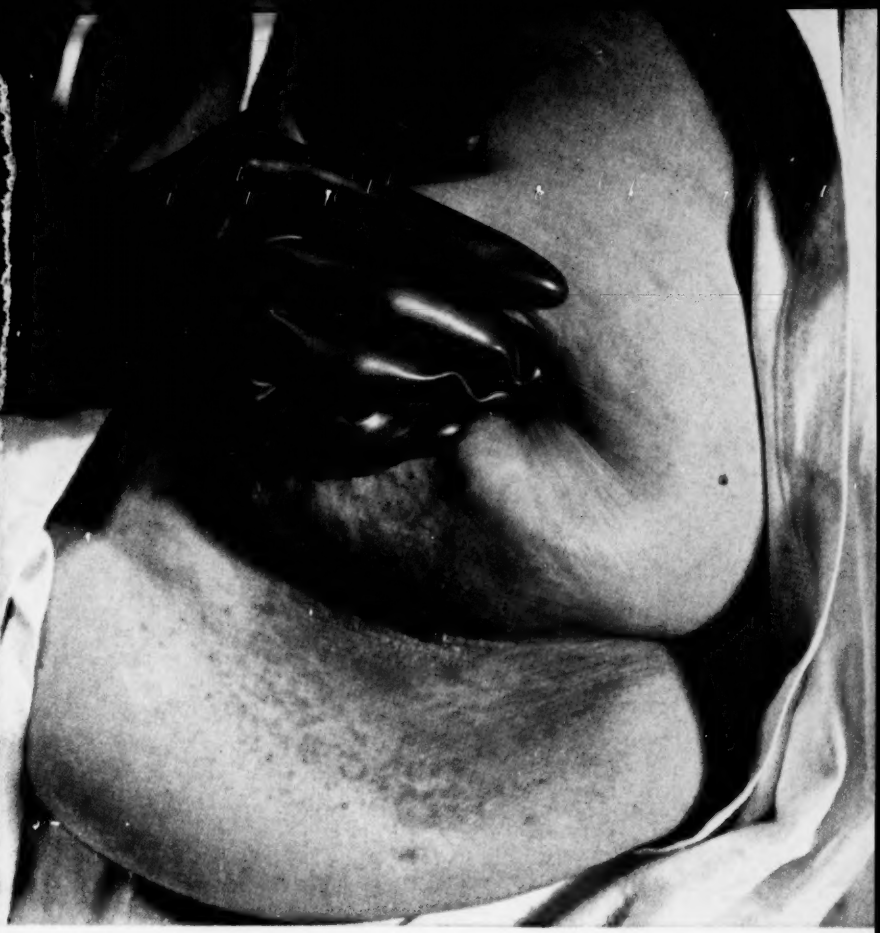
Proc. Am. A. Cancer Research 1:52, 1953.

Virology

Tobacco Virus Inhibitors

Biosynthesis of tobacco mosaic virus is inhibited by several purine and pyrimidine derivatives apparently through interference with uracil utilization. Most effective inhibitors are the 2-thiopyrimidines, although 2-thiothymine is slightly less active and 2-thiouracil and 2-thiocytosine, report Dr. Frank L. Mercer and associates of the St. Louis College of Pharmacy and Allied Sciences, St. Louis. Purine analogues, 2,6-diaminopurine and 8-azaquanine, inhibit virus multiplication to a lesser extent than do the pyrimidine derivatives. Addition of uracil to the culture media suppresses the inhibitory powers of the thiopyrimidines.

Science 117:558-559, 1953.



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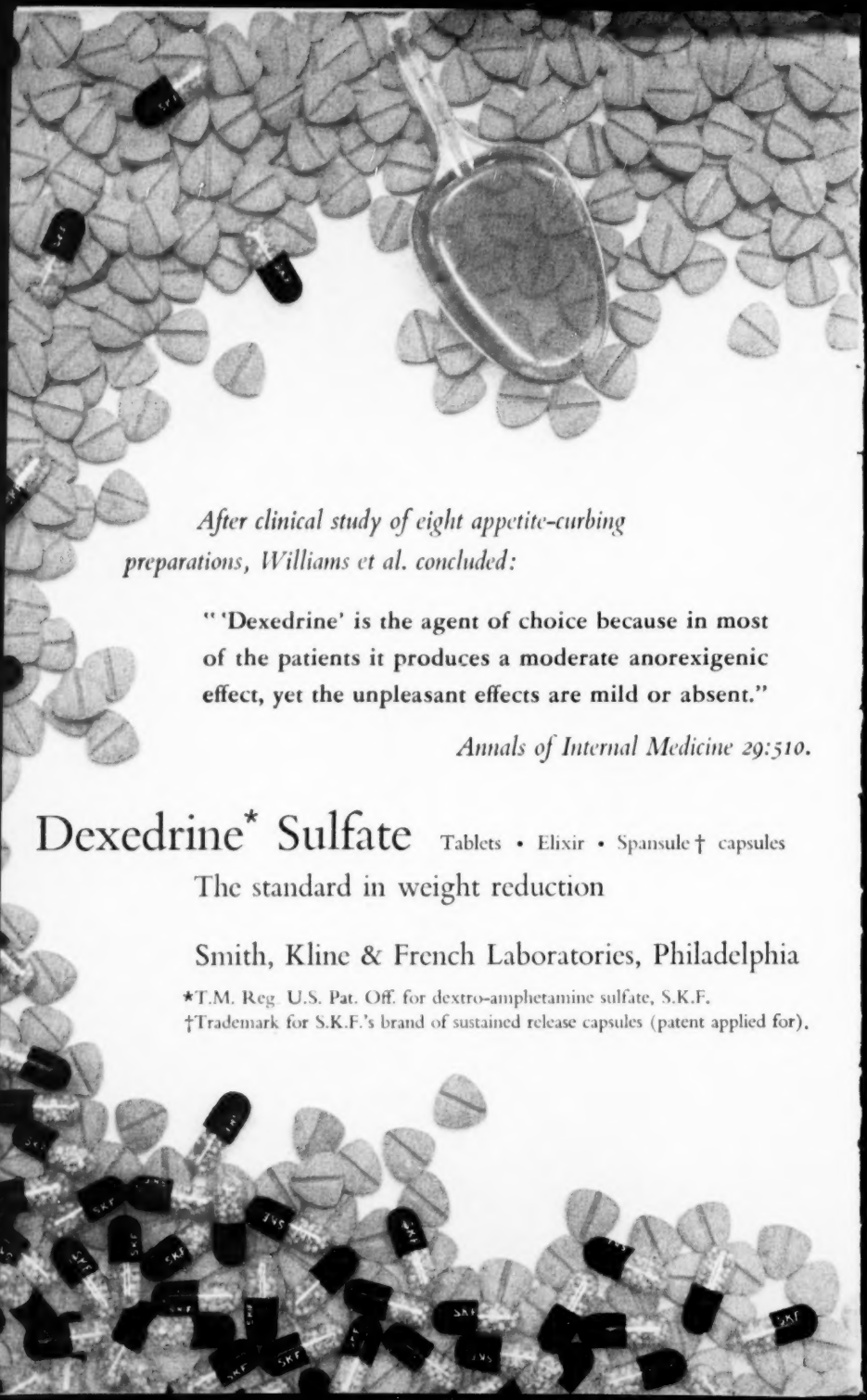

After clinical study of eight appetite-curbing preparations, Williams et al. concluded:

"'Dexedrine' is the agent of choice because in most of the patients it produces a moderate anorexigenic effect, yet the unpleasant effects are mild or absent."

Annals of Internal Medicine 29:510.

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†Trademark for S.K.F.'s brand of sustained release capsules (patent applied for).

Genetics

Human Fertilization

Activity of juxtaposed human ova and sperm has been observed by Dr. Landrum B. Shettles of Columbia University, New York City. Ova were aspirated from follicles of ovaries still in situ or recently excised, and semen was applied. When bits of tubal mucosa were added, ovaries were denuded of cumulus and corona cells in less than three hours. After chance contact with the outer boundary of zona pellucida, sperm adhered and soon covered the surface. With hundreds of sperm heads at right angles to the outer layer and tails actively moving, the ovum was often rotated. Sperm with tails attached sometimes penetrated the entire thickness of the zona pellucida, and the head, surrounded by a translucent halo, could be seen against the vitelline membrane.

Federation Proc. 12:131, 1953.

Oncology

Anaerobiosis and Cancer

In vitro transformation of normal fibroblasts into malignant cells results after repeated exposures to an atmosphere poor in oxygen. Subcultures of fibroblasts originating from myocardium of rats were exposed to nitrogen atmospheres for fifteen minutes about every twelve hours for three successive days, a process repeated during the experimental period, and were extensively damaged so that death of some cultures ensued, report Dr. Harry Goldblatt and Gladys Cameron of Cedars of Lebanon Hospital and the University of Southern California, Los Angeles. Fragments of tissue from the same rat heart were not exposed to nitrogen and grew continuously throughout the same period. Two cultures that recovered after anaerobiosis showed progressive cellular changes. Eventually, after the fifth period of nitrogen exposure, the entire cultures were transformed into malignant cells. A progressive, invading malignant growth resembling fibrosarcoma developed after transplantation of culture neoplasm into adult animals.

J. Exper. Med. 97:525-551, 1953.

Proteins

Genesis of Hepatomas

The proportion of balanced protein in the diet and not the specific action of sulfur-containing amino acids determines the spontaneous genesis of hepatomas in mice. Drs. Herbert Silverstone and Albert Tannenbaum of Michael Reese Hospital, Chicago, find that the addition of 1% of sulfur-containing amino acids to foods containing 9% casein increases the rate of tumor formation as much as does 18% of the latter. A balanced protein was constructed of casein, gelatin, and methionine in the ratio 500:100:12. Neoplasms developed in 60% of the animals receiving 11% balanced protein, in 64% on the same fare with an additional 0.4% methionine, in 20% on a 6% ration, and in 16% when the methionine content of the 6% balanced protein was augmented above the amount in the 11% diet.

Proc. Am. A. Cancer Research 1:51, 1953.

short REPORTS

Lipids

Choline and Tissue Fluid

Edema due to starvation or nephrosis may subside rapidly after oral administration of choline chloride. Deficiency of choline, a lipotropic factor beneficial to liver function, may lead to a qualitative change in serum albumin, producing edema, or affect the phosphatide tricomplex within the cells, thus influencing cell membrane permeability, believe Drs. T. F. Bloem and H. Neumann of Amsterdam, Holland.

Lancet 264:827-828, 1953.

Oncology

Radioactive Potassium and Tumor Evaluation

Because gamma rays are measureable to greater depths than beta emanations, radioactive potassium, K^{42}, surpasses P^{32} in differentiating benign and malignant tumors of the breast. Dr. Ira T. Nathanson and associates of Harvard University and Massachusetts General Hospital, Boston, find a significant increase in uptake of the isotope by cancers, but no appreciable difference in the amounts taken up by nonmalignant and inflammatory growths and normal tissues. In 80 patients with histologically proved neoplasms receiving doses of 200 to 500 microcuries of K^{42} the longest interval between intravenous administration and counting was fifteen minutes. Identical sites on the diseased and normal breast were counted with a lead-shielded directional scintillating counter. Of the 5 false negative determinations, 2 were partly attributable to technical errors and 3 were obtained in cases of low-grade intraductal carcinoma.

Proc. Am. A. Cancer Research 1:40, 1953.

Nutrition

Diet and Plasma Cholesterol

Chemically constant diets containing large amounts of vegetable fat do not cause elevation of plasma cholesterol. Administration of vitamin- and mineral-fortified diets containing cottonseed or soybean oil as the source of fat and calcium caseinate for protein reduced plasma cholesterol and phospholipid levels in more than 20 patients studied by Dr. Laurance W. Kinsell and associates of the Institute for Metabolic Research of the Highland Alameda County Hospital, Oakland, Calif. Resumption of a mixed diet containing animal fat resulted in a return to normal lipid levels. Reduction of cholesterol and phospholipid levels may be due to lack of dietary cholesterol in the vegetable fat diet, effect of vegetable sterols on cholesterol and phospholipid metabolism, or some component of the formula.

J. Clin. Nutrition 1:224-231, 1953.

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Surgery

Atrial Septal Repair

Satisfactory repair of large atrial septal defects is accomplished in dogs when a polyvinyl sponge wrapped in pericardium is inserted between the auricular chambers, the approach being through the right atrium. The plastic plug becomes firmly attached to the endocardial-covered surfaces, report Dr. David E. Donald and associates of the Mayo Clinic, Rochester, Minn. In 9 consecutive operations, closure was functionally complete in all animals and anatomically so in 4. This method may not be applicable to human beings because the procedure depends upon the presence of portions of the septum.

Proc. Staff Meet., Mayo Clin. 28:288-295, 1953.

Cardiology

Blood Coagulability after Infarction

The rationale of anticoagulant therapy is determined by 3 variant phases of blood coagulability immediately after myocardial infarction. Dr. Jean-Louis Beaumont and associates of Hospital Boucicaut, Paris, find that hypercoagulability is almost always found during the initial twenty-four to forty-eight hours. On the second or third day, spontaneous secondary hypocoagulability occurs and lasts about seven days. Beginning about the eighth or tenth day, the initial state returns and persists for a few weeks or several months. Immediately after occurrence of the infarct, heparin should be given for twenty-four to thirty-six hours. No anticoagulants should be administered after the second day unless frequent Quick and in vitro heparin tests demonstrate a continuing increased coagulation. Treatment is maintained until termination of the tendency to hypercoagulation. Among 71 patients thus managed, 7 died and thromboembolic complications resulted in 2, in contrast to 36 deaths and 40 embolic accidents among 96 persons treated in the same hospital without anticoagulants.

Am. Heart J. 45:756-768, 1953.

Carcinoma

Transplantation of Lung Cancer

Human tumors can be transplanted heterologously only after a certain stage of development has been reached. This stage seems to coincide with attainment of the property of metastasizability. In 13 instances of transferable cancer of the lung, Dr. Harry S. N. Greene of Yale University, New Haven, Conn., found that this autonomous state was present at the time of surgery. The patients died within a few months after operation. All growths were epidermoid; 3 were pleomorphic in cell type, 5 were anaplastic, and 5 were poorly differentiated. Pulmonary carcinomas either advance to autonomy more rapidly than similar lesions of other organs or the aberrant cells are present for a longer period before detection.

Cancer Research 13:347-349, 1953.

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Pharmacology

Antibiotic Synergism

Combinations of 2 or 3 antibiotics in subeffective doses inhibit greater numbers of bacteria than do the antibiotics used singly in higher concentrations. Inhibition of 329 organisms from nasopharyngeal cultures from 100 patients with chronic sinorespiratory infections was obtained with various combinations of penicillin, streptomycin, bacitracin, terramycin, Chloromycetin, aureomycin, and neomycin. All possible mixtures were comprised of predetermined noninhibiting concentrations of each antibiotic for the organism being tested. Mixtures of 3 antibiotics were more effective than mixtures of 2 and gave almost complete inhibition irrespective of organism type or antibiotic mixture, report Dr. Norman Molomut and associates of the New York Medical College, New York City. No instance of antagonism was observed in the combinations tested.

Antibiot. & Chemother. 3:249-253, 1953.

Radiology

Splenic-Portal Venography

Diagnosis of extrahepatic obstruction in portal hypertension may be facilitated by contrast visualization of the portal venous system before laparotomy. When Diodrast, a radiopaque material, is percutaneously injected into the spleen, the site and type of extrahepatic obstruction and the conditions of the veins of the portal system may be observed without a time-consuming dissection. No complications of bleeding or thrombosis of the anastomotic site occurred in 6 patients subjected to splenic-portal venography, report Dr. Henry T. Bahnson and associates of Johns Hopkins University, Baltimore. The patient is placed in a supine position on a radiographic table and, after administration of local or general anesthesia, an 18-gauge needle, 2½ in. long and fitted to a standard 20- or 50-cc. syringe, is introduced percutaneously into the spleen in an oblique direction. A 70% Diodrast solution is then injected as rapidly as possible in amounts of 12 to 40 cc., depending on the size of the patient. Injection is usually complete in two or three seconds. Serial films at the rate of one per second starting toward the end of the injection, or a single film at completion of injection may be made.

Bull. Johns Hopkins Hosp. 92:331-345, 1953.

Medical News

World Language for Science

Spanish and other languages used for summaries in scientific journals may be replaced by Interlingua, a basic language form designed for the western world. Meaning can be understood practically on sight by readers of technical material. Information on the subject and translation service for medical or other papers and abstracts are offered by Dr. Alexander Gode and Hugh Blair at 80 E. 11th St., New York City 3. Details may be obtained also from Watson Davis, Director of Science Service, 1719 N St. N.W., Washington 6, D. C.

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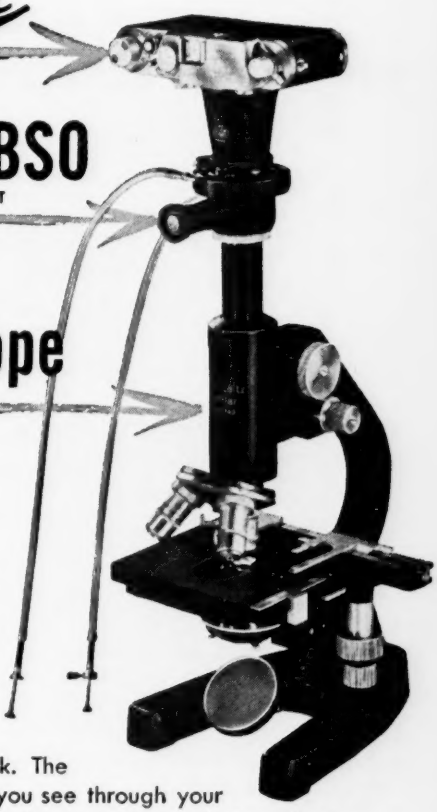

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Pharmacology

Noncaloric Sweetening Agent

Sucaryl, calcium N-cyclohexylsulfamate, has no toxic effects when taken in doses of 5 gm. daily as a noncaloric sweetening agent. No cumulative effects on hematopoietic, renal, hepatic, or cardiovascular systems were observed in patients consuming the agent daily for as long as seven months. Within three hours after intravenous administration, 70 to 90% of an intravenous dose is excreted in the urine. Nitrogen, sodium, and potassium are unaffected, report Dr. James A. Schoenberger and associates of the University of Illinois, Chicago. Changes in calcium and phosphorus excretion may be ascribed to the calcium supplied by the drug. All patients noticed increased bulk and softer consistency of stools but no increase in frequency of bowel movement. Stools returned to normal size and consistency when ingestion of Sucaryl was stopped.

Am. J. M. Sc. 225:551-559, 1953.

Oncology

Altered Excretion of Isotopes

Efficiency of radioisotopes in cancer therapy may be increased by the action of complexing agents in modifying the distribution and excretion of metallic ions. Drs. Hiram Hart and Joseph Greenberg of Montefiore Hospital, New York City, find that complete removal of lanthanum^{140} injected intrapleurally into cancer patients with effusion is facilitated by subsequently instilled ethylenediaminetetraäcetic acid (EDTA). When tracer amounts of La^{140} as the chloride or as the EDTA complex are injected intravenously, excretion is negligible after the loss of 5 and 10%, respectively, within forty-eight hours. Subsequent administration of calcium EDTA will increase the urinary output 100 times. Preceding and concomitant infusion of EDTA, however, permits recovery from the urine of 30% of the injected La^{140} during the first four hours and about 40% in forty-eight hours.

Proc. Am. A. Cancer Research 1:23-24, 1953.

Public Health

Source of Trichomoniasis

Incidence of *Trichomonas vaginalis* infections can be reduced by 80% with the adoption of gap toilet seats for all public lavatories. Viable *T. vaginalis* organisms are deposited on the inner lip of ordinary lavatory seats and can then infect several subsequent users, warns Dr. W. McKim H. McCullagh of London. The disease is venereal in only 15% of cases, and is not acquired in pools or baths, indicating the importance of the toilet seat as an infection source.

Lancet 264:698, 1953.

Meetings

Cerebral Palsy Session

The Seventh Annual Meeting of the American Academy for Cerebral Palsy will be held October 30 and 31 at the Western Hills Hotel in Fort Worth. The scientific sessions are open to members of the medical and allied professions.

When Chronic Fatigue, Insomnia are due to Low Blood Sugar Level...

Prescribing a simple change in diet may often restore energy and zest for living in many patients.

THE pace of modern living . . . business pressures, strenuous social activities, hurried meals, improper diet . . . all too frequently lead to exhaustion, loss of energy, inability to sleep. Now clinical studies show that these clinical manifestations are often associated with hyperinsulinism—causing a lowered *blood sugar level.**

Portis reported these fatigue states were aggravated when the patients consumed beverages and foods that contained free sugar. He further stated that while these raise the blood sugar level momentarily, their "free" sugar is burned up too quickly, and a greater letdown follows. On the basis of this evidence a diet high in proteins and relatively high in carbohydrates in a complex form was given to his patients. He found such foods as milk are especially beneficial because they are digested more slowly, and because they maintained the blood sugar level for a longer period.

For these reasons milk with Postum is suggested as a between-meal feeding and bedtime drink. It can often be of practical benefit to the patient. The milk provides nourishment that is slowly, steadily converted to blood sugar. Postum offers a pleasant and palatable flavor. Postum offsets the distaste for hot milk.

Moreover, Postum in the milk drink has a psychological advantage because many patients resent the taking of milk in itself as a regression to their childhood patterns. Postum has been recommended by doctors for over 40 years. It is widely known to your patients as a caffein-free drink—a beverage that has helped countless caffein-susceptibles to break the coffee and tea habit.

We will be glad to secure for you a reprint of Dr. Portis' article. We will also send you without charge a supply of Postum for your patients if you send in the coupon below.

*Portis, Sidney A., Life Situations, Emotions and Hyperinsulinism, J.A.M.A. **142:** 1281-1286 (April 22) 1950.

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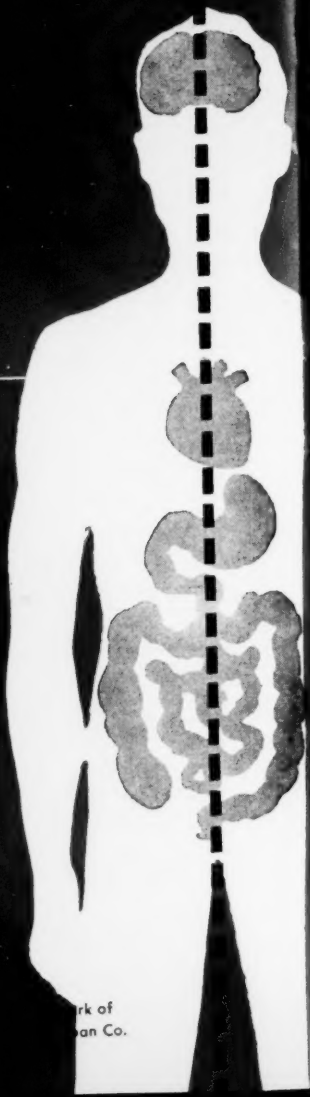

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"NEXT TIME YOU HAND ME A KNIFE, DON'T GIVE IT TO ME POINT FIRST."

"HE'S THE OPTIMIST. YOU KNOW, THE EYE DOCTOR."

"WELL, LET'S SEE — THERE'S NELLIE, SHIRLEY, HELEN, NELLIE, MARY, LOUISE, NELLIE, LUCY, SUSAN, NELLIE, ALICE, NELLIE ... "

"BETTER STOP READING THOSE MURDER MYSTERIES — THEY'RE CURDLING YOUR BLOOD."

"IN THIS BUSINESS, WE HAVE TO WATCH THE CLOCK."

"FIRST I WANT TO KNOW — HOW SHOULD I FEEL?"

Pathology

Lymph Nodes as Tumor Barrier

In rabbits tumor cell emboli are arrested and may be retained for even five weeks in the subcapsular sinus of 1 or more lobules of the lymphatic organ. Drs. Irving Zeidman and Joanne M. Buss of the University of Pennsylvania, Philadelphia, find that the animals do not develop cancer if the popliteal nodes are removed from one to three days after being injected with viable neoplastic cells.

Proc. Am. A. Cancer Research 1:63, 1953.

Sterols

Anticholesteremic Agent

Ingestion of excessive amounts of sitosterol reduces the blood cholesterols in man and prevents experimental hypercholesteremia and cholesterol atherosclerosis in rabbits. This agent is a nonresorbable stereoisomer of cholesterol derived from plants. Oral intake of the sterol does not interfere with health or with the metabolism of any foodstuff other than cholesterol, reports Dr. O. J. Pollak of the Quincy City Hospital, Quincy, Mass. In man, blood cholesterol levels below 200 mg. per 100 cc. could not be influenced; higher cholesteremic levels appeared to be more easily affected than lower. In both man and rabbits, excess sitosterol is required to prevent cholesterol resorption and may be necessary for neutralization of endogenous cholesterol present in the intestine. Resorption of cholesterol is prevented by the formation of nonseparable crystals caused by the interaction of cholesterol and sitosterol.

Circulation 7:696-700, 702-706, 1953.

VALUE AND SAFETY OF "TRILENE" INHALATION ANALGESIA PROVED IN UROLOGIC PRACTICE

Study shows self administration with "Duke" University Inhaler has wide application

DURHAM, N. C.—In certain painful urologic procedures, "Trilene," self administered with the "Duke" University Inhaler, safely induces marked analgesia with few if any side effects, and provides convenience of administration, reported Victor A. Politano, M.D. of the Department of Urology, Duke University, Durham, N. C. This paper was recently presented in Havana, Cuba, before the Southeastern Section of the American Urological Association.

In over 100 cases, specially selected because a customarily painful or difficult diagnostic or therapeutic procedure was anticipated, and because "general anesthesia or heavy sedation was not practical or advisable," results with "Trilene" analgesia were described as excellent in 79 cases, and good in 28.

Stressing the need for patient cooperation and induction of adequate analgesia, Dr. Politano said "The occasional failures encountered have been due to improper or insufficient instruction in the use of the inhaler and hurried instrumentation before proper analgesia."

These findings add further support to the extensive clinical evidence of effectiveness and safety of self-administered "Trilene" analgesia in obstetrics, as well as in surgical procedures such as the reduction of fractures, incision and drainage of abscesses, removal of painful dressings.

"Trilene," self administered with the "Duke" University Inhaler, will usually provide smooth and rapid induction of analgesia with minimum or no loss of consciousness. Unconsciousness automatically interrupts inhalation. Recovery is rapid, and nausea and vomiting rarely occur.

"Trilene" is nonexplosive, and in the mixtures employed clinically is nonflammable in air and oxygen. "Trilene" may also be used as an analgesic adjunct while light planes of anesthesia are maintained with various anesthetic agents.

"Trilene," a brand of highly purified trichlorethylene (Blue), is supplied in containers of 300 cc.

Further information on "Trilene" or the "Duke" University Inhaler (Model-M) may be obtained by writing to Ayerst, McKenna & Harrison Limited, 22 East 40th Street, New York 16, N. Y.

5332

"DUKE" University Inhaler (Model-M)

Recommended for use with "Trilene" in obstetrics and surgery, the "Duke" University Inhaler is specially designed for economy, facility of handling and ready control of vapor concentration. It can be operated with ease and efficiency by adult or child in the doctor's office, in the hospital, in industrial dispensaries, in the home, or even enroute to the hospital.

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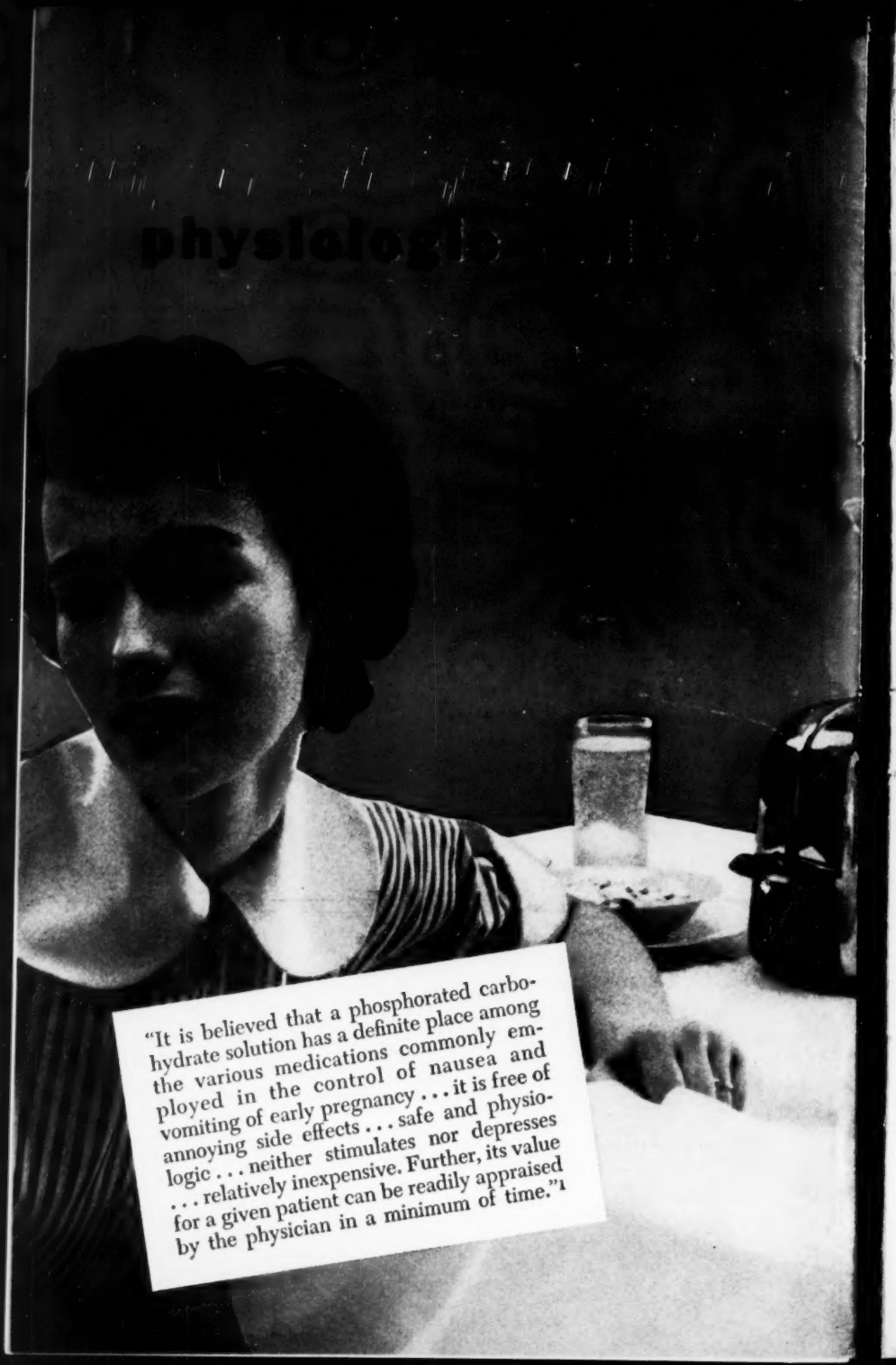

"It is believed that a phosphorated carbohydrate solution has a definite place among the various medications commonly employed in the control of nausea and vomiting of early pregnancy . . . it is free of annoying side effects . . . safe and physiologic . . . neither stimulates nor depresses . . . relatively inexpensive. Further, its value for a given patient can be readily appraised by the physician in a minimum of time."[1]

"morning sickness"

EMETROL

[PHOSPHORATED CARBOHYDRATE SOLUTION]

In a well-controlled study, Crunden and Davis[1] recently found that EMETROL abolished or reduced the severity of pregnancy nausea in 78.8 percent of 123 patients . . . *usually within 24 hours.* In contrast, a placebo of similar taste and appearance proved moderately beneficial in only 15.6 percent of 122 controls.

EMETROL works *physiologically,* providing rapid relief in non-organic nausea and vomiting without recourse to antihistaminics, barbiturates, or narcotics; it thus may be administered freely without fear of distressing side-effects.

EMETROL contains balanced amounts of levulose and dextrose in coacting association with orthophosphoric acid, stabilized at an optimally adjusted pH. The dosage of EMETROL for nausea of pregnancy is 2 tablespoonfuls taken *undiluted* immediately on arising, repeated as required if nausea recurs.

Also beneficial in other types of vomiting: EMETROL has also been used successfully in acute infectious gastroenteritis (intestinal "flu"), motion sickness, and nausea due to drug therapy or anesthesia. Samples and literature giving dosages for the various indications of EMETROL are available on request.

IMPORTANT: EMETROL must *not* be diluted or followed by any liquids for at least 15 minutes.

SUPPLIED: Bottles of 3 fl. oz. and 16 fl. oz. through all pharmacies.

1. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. 65:311, 1953.

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Gynecology

Vaginal Smears in Cancer Survey

Exfoliative cytology may reveal unsuspected malignant lesions. Dr. Cyrus C. Erickson of the University of Tennessee, Memphis, and associates report the chance finding of neoplasms in at least 30 of 10,000 women examined by the vaginal smear method. The results were negative in 90% of the 10,000 smears and unsatisfactory in 6%; additional examination or biopsy was requested in 4%. Biopsy of excised tissue in 150 of 181 positive or suspected cases confirmed the presence of intraepithelial carcinoma of the cervix or invasive cancer in 73 instances.

Proc. Am. A. Cancer Research 1:14-15, 1953.

Physiology

Hemorrhagic Shock

Intraarterial transfusion of blood and dextran is no more effective than the intravenous route in combating oligemic shock in dogs. In animals rendered hypotensive by controlled hemorrhage, arterial infusion produces an average arterial pressure rise of 61.5 mm. of mercury and a coronary flow increase of 66.5 cc. per minute. Venous infusions produce pressure rises of 56.1 mm. of mercury and increase coronary flow 65.7 cc. per minute. When the bleeding is continued until symptoms of hemorrhagic shock appear, arterial transfusion is incapable of restoring coronary flow or arterial pressure. A relatively brief period of left main coronary artery perfusion restores circulation completely. Intravenous fluid is given with greatest facility and may be administered at quite rapid rates, believe Dr. Robert B. Case and associates of Harvard University, Boston. However, arterial infusion might be preferred when venous blood is not being passed to the arterial side, such as in cardiac arrest or complete heart failure, and during surgical correction of severe mitral stenosis. In these cases, massive intraarterial transfusion might influence coronary flow enough to aid in recovery of the heart beat.

J.A.M.A. 152:208-212, 1953.

Biochemistry

Prothrombinemia and Aspirin

Augmentation or reduction of the hypoprothrombinemic response to dicumarol may be obtained in dogs and rats with variable doses of salicylic acid. Small doses of aspirin administered with dicumarol result in an increase and prolongation of the hypoprothrombinemia, whereas large doses, 1 gm. per kilogram, suppress the anticoagulant's action, even leading to hyperprothrombinemia, reports Dr. John B. Field of the University of Wisconsin, Madison. Acetylsalicylic acid alone in massive quantities will diminish prothrombin levels the same as dicumarol. A competitive inhibition may be responsible for the biologic antagonism between the salicylates and the anticoagulant, since both drugs are related in synthetic degradation products.

Science 117:499-501, 1953.

Announcing
An important contribution to dermatologic

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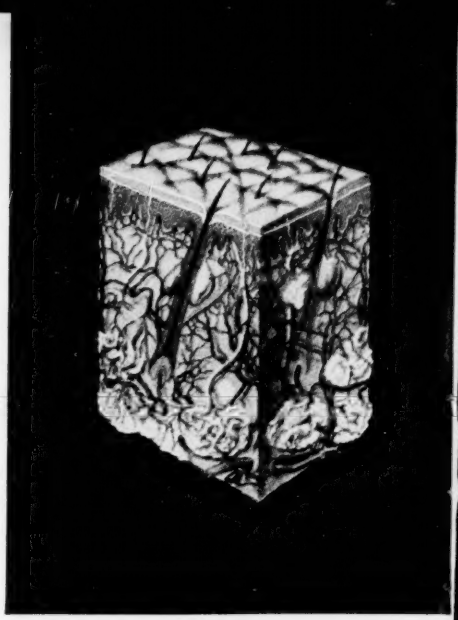


CONCISE FORMULARY FOR MAXIMUM EFFICACY AND SAFETY IN THE TREATMENT OF VIRTUALLY ALL COMMON SKIN DISORDERS

Clinical development

Physicians have long felt the need for a simplified group of dermatologics based on truly sound physiologic principles. The same need led the Department of Dermatology of Harvard Medical School and Massachusetts General Hospital to prepare, after extensive study, a concise, rational formulary for use in that institution.

Because this institutional achievement is an important contribution to topical dermatologic therapy, White Laboratories has made available the seven most widely useful preparations in the new formulary (one lotion and six ointments) under the easy-to-remember name of *Appliderm.*

Rational dermatologic therapy

Most skin disorders, though frequently of unknown cause, present recognizable signs and symptoms whose treatment requires topical

measures determined by (1) the morphologic characteristics of the lesions and (2) the capacity of specific medications to produce certain local effects. But these effects, whether antipruritic, keratolytic, emollient, antifungal, or drying, must be accomplished with a *minimum risk of cutaneous irritation or sensitization.*

> Yet many of the innumerable dermatologic remedies in use today include ingredients that have proved to be capable of doing serious harm to the skin. According to Lane,[1] "agents used in therapy have caused more visits to the dermatologist than any single skin disease." In fact, the appalling incidence of "therapeutic" or "overtreatment" dermatitis has been estimated to be as high as 40 to 50 per cent.[2]

In the Appliderm Formulary, however, not one active or inactive ingredient is a known, potent skin sensitizing agent. From the physician's standpoint, therefore, the Appliderm preparations are as significant for what they omit as for what they contain.

The Appliderm Formulary

PHYSIOLOGIC SOUNDNESS
PURPOSEFUL SIMPLICITY

The Appliderm Formulary has been critically stripped down to the demonstrated essentials of topical therapy. Only those drugs authoritatively proved to have therapeutic value—and to "do no harm"—have been retained. Moreover, the vehicles of these preparations have been formulated to provide scientifically desirable drug concentrations on the skin, *following* evaporation of the volatile parts. In some cases the concentration of the therapeutic agent is five times greater than the formulas indicate.

The carefully balanced formulas of the bases, plus the special processing used in manufacture, insure constant, uniform concentrations, safety, and patient-acceptance of the Appliderm products.

Strict adherence to sound principles of *purposeful simplicity* and *therapeutic rationality* has produced in the Appliderm Formulary a realistically practical line of effective and safe preparations for the treatment of virtually all common skin disorders.

1. Lane, C.G.: New Eng. J. Med. 246:77, 1952.
2. Osborne, E.D.: J.A.M.A. 146:720, 1951.

FOR FORMULARY SEE NEXT PAGE ▶

Continued from preceding page

A NOTABLE DEVELOPMENT IN DERMATOLOGIC THERAPY

Appliderm Formulary

For relief of pruritus in subacute dermatoses:

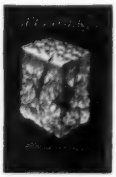
Appliderm–1 Antipruritic Lotion. 0.2% menthol and 0.17% hexachlorophene in an aqueous solution of glycerin and isopropyl alcohol. Twofold antipruritic effect via neurologic action of menthol and cooling evaporation of water/alcohol. Prophylaxis against infection provided by hexachlorophene.

For relief of pruritus in more chronic dermatoses:

Appliderm–2 Antipruritic Ointment. 0.2% menthol and 0.25% hexachlorophene in an emulsion base with a high aqueous concentration.

For dry, rough or inflexible skin in subacute and chronic dermatoses:

Appliderm–3 Emollient Ointment. Stable, water-in-oil emulsion of petrolatum emulsified by sorbitan sesquioleate. Produces pro-



Have you received your copy of "Appliderm—A Physiologic and Practical Approach"? If not, or if you wish additional copies, please let us know.

tective and occlusive film. Easy to apply and remove. High in patient-acceptance.

For common acne:

Appliderm—4 Resorcinol-Sulfur Ointment. Antiseborrheic effectiveness of 0.5% resorcinol and 2.0% precipitated sulfur. Greaseless, *flesh-tinted* emulsion base for excellent patient-acceptance.

For chronic, scaling dermatoses:

Appliderm—5 Sulfur-Salicylic Acid Ointment. Molecularly dispersed salicylic acid (3%) and sulfur (3%) in an anhydrous, washable ointment base. Easily removed from skin or scalp.

For chronic, eczematous dermatoses:

Appliderm—6 Tar Ointment. The most effective form of tar—crude coal tar (5%)—in an anhydrous, washable base. Easily applied even to moist lesions—easily removed with warm water.

For superficial fungous infections of the skin, particularly dermatophytosis:

Appliderm—7 Undecylenic Acid Ointment. Non-occlusive, non-macerating hydrophilic emulsion base with 2.5% undecylenic acid a specific for fungal infections of skin and 0.1% hexachlorophene for prophylaxis against bacterial infection.

For the physician's convenience, the Appliderm ointments and lotion are numbered from 1 to 7. They may be easily prescribed by number or name, or by both.

Supplied —Ointments: in 1½ oz. tubes. Lotion: 3 oz. spray package (permits application as a fine spray or as a stream).

White Laboratories, Inc., Kenilworth, N. J.

Virology

Virus in Lymphocytes

Granules interpreted as viruses may appear in splenic lymphocytes during attacks of infectious mononucleosis, poliomyelitis, herpes, and some undiagnosed conditions suggesting viral infection. Dr. Raphael Isaacs of Michael Reese Hospital, Chicago, found that the lymphocytes did not resemble the typical mononucleosis cell. Granules stained blue in the acute stage of disease, red during convalescence. The size varied slightly with different ailments. No granules were found in patients with other types of sickness or in poliomyelitis contacts who did not become ill.

Federation Proc. 12:393, 1953.

Narcosis

Barbital Detoxification

The reticuloendothelial system may be the chief instrument for removal of barbital from the body after therapy. Narcosis induced in rats soon after injection of trypan blue is unusually deep and recovery slow, observe Drs. Stelios C. Samaras and Nicholas Dietz, Jr., of Creighton University, Omaha. But six weeks later, when dye is largely eliminated, barbital has less than ordinary effect. Apparently just enough dye remains in the reticuloendothelial system to excite overactivity. Initially trypan blue seems to inhibit function by blocking reticuloendothelial cells.

Federation Proc. 12:122-123, 1953.

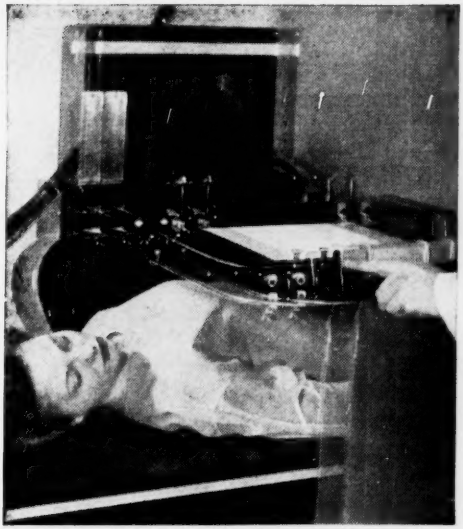
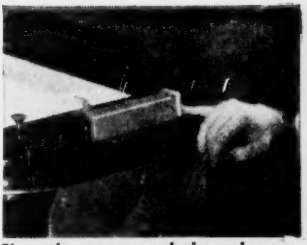
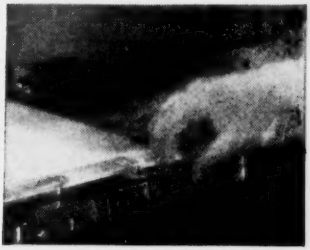


Photo shows fingertip control of screen and tower. Easy movement provides efficient and effortless operation for the physician.



Fingertip pressure unlocks and moves screen in one motion.



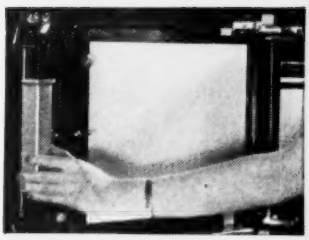
Action photo shows fingertip control with motion stopping smoothly.

MOVES AT A TOUCH

The Westinghouse Power Assist now takes all extraneous effort out of fluoroscopy. In any position of the table, the device adds thrust to the doctor's fingertips so that screen and tower glide easily along the table, or up and down when table is vertical.

The control is mounted on the forward edge of the screen, operates with locks off or on. When pressed longitudinally or vertically, it releases the proper locks and moves the screen; when the pressure is released, the magnetic locks engage and motion stops smoothly.

For information on further advantages of this newest advance in fluoroscopy, ask your Westinghouse representative for details. Or write the address below, Dept. F-86 for further information.



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Virology

Antiviral Substance

Helenine, a substance isolated from a culture of *Penicillium funiculosum* in Guam, is effective against encephalomyelitis and virus infections in mice. The substance prevents death or prolongs life of animals injected with 10 to 1,000 fatal doses of encephalomyelitis, reports Dr. Richard E. Shope of the Rockefeller Institute for Medical Research, Princeton, N. J. Helenine is most effective when given within the first ten hours after infection, although influence is apparent when treatment is delayed for twenty-four hours. The substance probably renders virus nonantigenic by either acting directly on the virus or interfering with the developmental cycle.

J. Exper. Med. 97:601-625, 1953.

Cardiology

Measurement of Left Auricular Pressure

Direct measurement of pressure in the left auricle may be done by the use of a specially adapted needle introduced into the vessel through a bronchoscope. The needle, 5.5 to 6 cm. long with a 0.3-mm. bore, is fused to a metal bronchus aspirating tube 50 cm. in length which in turn is attached by 40 cm. of rigid polythene tubing to a standard membrane manometer filled with fluid. The puncturing needle is used as a damping needle, thus preventing free damped vibrations in the fluid system, report Drs. P. R. Allison and R. J. Linden of the General Infirmary, Leeds, England. After the administration of proper anesthesia to the patient, the needle, filled with a saline-heparin solution, is passed through the anteromedial wall of the right bronchus at the carina for about 4 cm. before entering the auricle. Pressure wave tracings from patients with normal hearts, mitral stenosis, or mitral regurgitation indicate that wave forms in the left auricle may be different from the pressure patterns observed in pulmonary capillaries.

Circulation 7:669-673, 1953.

Oncology

Mustard Gas and Lung Cancer

Fumes of sulfur mustard may be carcinogenic to mice with high genetic susceptibility to pulmonary tumors. Strain A mice exposed for fifteen minutes to vapors from 0.01 cc. of sulfur mustard in an 8-liter desiccator have greater incidence of pulmonary tumors with a larger number of nodules than do litter mates not exposed to the gas, reports Dr. W. E. Heston of the National Cancer Institute, Bethesda, Md. No sex differences are noted. Although mustard gas appears more potent carcinogenically when injected into strain A mice, the difference probably is due to dosage, since only a minute amount of the gas employed in the vapor experiment comes in contact with the lungs of each animal during the short time of exposure.

Proc. Soc. Exper. Biol. & Med. 82:457-460, 1953.

Taste Toppers . . . for all ages

that's what physicians and patients alike call these two favorite dosage forms of Terramycin because of their unsurpassed good taste. They're nonalcoholic — a treat for patients of all ages, with their pleasant raspberry taste. And they're often the dosage forms of first choice for infants, children and adults of all ages.

Terramycin®

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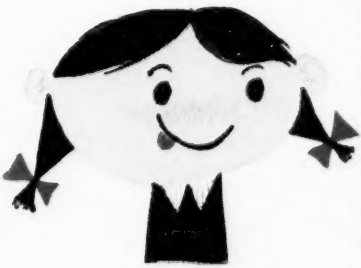

Pediatric Drops

Each cc. contains 100 mg. of pure crystalline Terramycin. In 10 cc. bottles with special dropper calibrated at 25 mg. and 50 mg. May be administered directly or mixed with nonacidulated foods and liquids. Economical 1.0 gram size often provides the *total dose* required for treatment of infections of average severity in infants.

Supplied: Bottles of 1.0 Gm.

Oral Suspension *(Flavored)*

Each 5 cc. teaspoonful contains 250 mg. of pure crystalline Terramycin. Effective against gram-positive and gram-negative bacteria, including the important coli-aerogenes group, rickettsiae, certain large viruses and protozoa.

Supplied: Bottles of 1.5 Gm.

Pfizer

PFIZER LABORATORIES, *Brooklyn 6, N. Y., Division, Chas. Pfizer & Co., Inc.*

who have Seborrheic Dermatitis of the scalp . . . prescribe

this effective new product

Effective control of scaling . . . prompt relief of itching and burning . . . extreme simplicity of use . . . this is the story of SELSUN Sulfide Suspension, Abbott's new *prescription-only* product for the management of seborrheic dermatitis of the scalp. Clinical investigators who treated 400 patients[1, 2, 3] found SELSUN effective in 92 to 95 percent of cases of mild seborrhea (common dandruff), and in 81 to 87 percent of all cases of seborrheic dermatitis.

SELSUN was successful in many cases that had failed to respond to other recognized methods of treatment. Optimum results were obtained in four to eight weeks, although itching and burning stopped after the second or third application in most cases. After the initial treatment period, a single application keeps the scalp free of scales for one to four weeks.

SELSUN is convenient to use, because it is simply applied while washing the hair and then rinsed out. It thus leaves the hair clean and odorless, and obviates the problem of stains on clothing and linens. Specific research on toxicity[1, 2] shows there are no harmful effects from external use of SELSUN as recommended. Supplied by pharmacies in 4-fluidounce bottles, with tear-off labels. Dispensed only on a physician's prescription. Abbott

References:

1. Slinger, W. N., and Hubbard, D. M. (1951), Arch. Dermat. & Syph., 64:41, July.
2. Stepyan, A. H. (1952), Ibid., 65:228, February.
3. Ruch, D. M. (1951), Communication to Abbott Laboratories.

PRESCRIBE **SELSUN**

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SULFIDE *Suspension*

(SELENIUM SULFIDE, ABBOTT)

D

Radiology

Postirradiation Bacteremia

Depression of a bactericidal agent in rabbit serum follows exposure to whole body radiation in doses of 650 r or more. Decrease of this serum component may be significant in the increased susceptibility to infection which appears after irradiation injury, suggest Drs. Stanley Marcus and David M. Donaldson of the University of Utah, Salt Lake City. Bactericidal action of rabbit serum becomes depressed by the fifth day after irradiation and returns to normal by the twentieth. After a second large exposure, the bactericidal activity is affected earlier and remains abnormal longer.

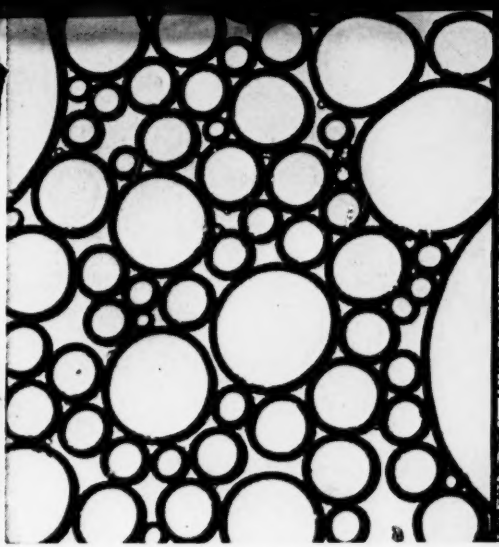
Proc. Soc. Exper. Biol. & Med. 83:184-187, 1953.

Cardiology

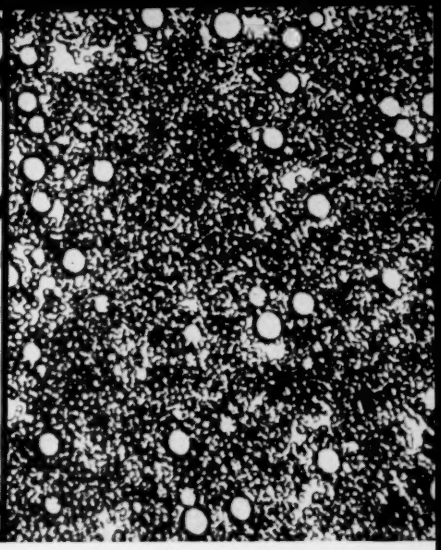
Endocarditis and Altitude

Sojourn at high altitudes favors development of bacterial endocarditis in rats not only from hypoxia but because of polycythemia. The 2 factors were produced together and independently in rats by Drs. Benjamin Highman and Paul D. Altland of the National Institutes of Health, Bethesda, Md. Heights of 25,000 and 18,000 ft. were simulated, and blood was also altered by bleeding and doses of cobaltous chloride. *Streptococcus mitis* was then given by vein. Rates of infection with both predisposing factors were virtually twice the incidence for either alone.

Federation Proc. 12:392, 1953.



1 *Oil dispersion (x133). Large irregular globules fail to mix readily with fecal mass. Phenolphthalein is not evenly distributed to stimulate peristalsis. Action may be sporadic and evacuation incomplete.*



2 *The fine oil emulsion (x133) of Agoral. The small, uniform globules and the phenolphthalein mix readily with the bowel content, producing peristalsis by more uniform lubrication and stimulation.*

Which Laxative is Better—

COARSE DISPERSION OR FINE EMULSION?

Coarse dispersions are unstable, and erratic in their effects. Any physician can recognize the superiority of the fine Agoral emulsion (*at right, above*) compared with an ordinary oil-in-water dispersion (*left*).

Free-floating oil is distasteful and often regurgitated. Large oil globules tend to coalesce and form pools in the gut, which may seep past the sphincter as anal leakage.

Agreeable to Sensitive Stomach

The fine emulsion of Agoral is palatable and will not distress a sensitive stomach. It assures more uniform dosage and distribution of the active ingredients, more uniform clinical results.

Its thorough admixture with the bowel content gives effective, uniform lubrication of the fecal mass as well as the canal. There is no loose oil to cause anal leakage.

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Agoral is emulsified exclusively with refined white mineral oil, purified white phenolphthalein, agar-gel, tragacanth, acacia, egg-albumen and glycerin, by a special process similar to that used for homogenizing milk.

For over 30 years medical men have obtained results with Agoral with a uniformity and precision which are a constant source of satisfaction both to them and to their patients.

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Gastroenterology

Therapy for Amebiasis

Adequate management of intestinal amebiasis may be effected by the administration of fumagillin. Dr. Gordon McHardy and associates of the Browne–McHardy Clinic and Touro Infirmary, New Orleans, advise a dosage schedule of 20 mg. three times daily for ten consecutive days. In 64 cases of *Endamoeba histolytica* so treated, only 2 patients had recurrences by the third month after treatment, and 1 patient had a reinfection six months later. All instances of ulceration were successfully healed in a relatively short time. Cases of intractability to standard combination therapy appeared to respond satisfactorily to fumagillin. Side effects of nausea, cramps, vertigo, and erythematous dermatitis were slight and transient.

South. M. J. 46:428-433, 1953.

Gastroenterology

Vitamin B_{12} Absorption

Deprivation of vitamin B_{12} is probably not the cause of the macrocytic anemia which sometimes develops after total gastrectomy. When 0.5γ of vitamin B_{12} labeled with cobalt 60 is given by mouth to such patients, practically all the administered radioactivity is excreted in the feces. Macrocytic anemia is not a consistent finding after total gastrectomy, yet all 4 patients studied by Dr. Marian E. Swendseid and associates of the University of California, Los Angeles, were unable to utilize oral B_{12}; therefore, some other dietary factor must be responsible for the anemia. Gastric juice given with the vitamin permits 75% of the dose to be absorbed in gastrectomized patients. The lack of gastric mucosa as a source of intrinsic factor appears to be the specific defect in B_{12} absorption.

Proc. Soc. Exper. Biol. & Med. 83:226-228, 1953.

Psychiatry

Subconvulsive Metrazol

Minor depressive states may be improved by intravenous therapy with subconvulsive doses of Metrazol. Of 30 psychiatric patients treated by Dr. Bernard L. Pacella and associates of Columbia University, New York City, 3 patients, all diagnosed as mild depressive, had substantial to complete remission of symptoms after Metrazol injections. Other patients in the depressive category exhibited only diminished tension and motor agitation or no change in status. Initial dosage is 0.5 cc. This is increased daily by 0.1 to 0.5 cc. to a maximum single dose of 2 cc. once a day. Speed of injection and rate of daily increment depend upon individual reaction. Subconvulsive signs are palpitations, dizziness, tremulousness, pallor or flushing, and, occasionally, myoclonic movements. The therapy is particularly suited to physically handicapped patients unable to withstand an electric convulsive treatment. Metrazol injections exacerbate paranoid elements in some schizophrenic patients and elicit no beneficial response in psychoneurotic patients.

J. Nerv. & Ment. Dis. 117:50-54, 1953.

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Pharmacology

Effects of *d*-Amphetamine

Central nervous stimulation indicated by changes in electroencephalograms occurs in anesthetized dogs after administration of *d*-amphetamine, paralleling the sensory stimulating effects of the drug on animal behavior. The sympathomimetic amine produces electroencephalographic changes of increased frequency and decreased amplitude in dogs anesthetized with thiopental and decamethonium, report Drs. William Schallek and Donald Walz of Nutley, N. J. In unanesthetized dogs, the peak of increased motor activity occurs within one hour after administration of the drug.

Proc. Soc. Exper. Biol. & Med. 82:715-719, 1953.

Psychiatry

Adrenal Role in Psychosis

Abnormal qualitative steroidogenesis of the adrenal gland in schizophrenic patients is indicated by a consistent output of high levels of 17-ketosteroids and low levels of corticoids. However, adrenal responses to stress appear subnormal in schizophrenic patients, report Dr. Hudson Hoagland and associates of the Worcester State Hospital, Shrewsbury, Mass. When subjected to stress tests, two groups of schizophrenic patients, aged 20 to 39 and 40 to 60 years, had higher than normal rates of excretion of urinary water, 17-ketosteroids, sodium, and potassium and lower than normal rates of corticoid and phosphate excretion. However, a significant increase in the abnormally low resting level of phosphate excretion is observed with stress. The older schizophrenic patients were about twice as responsive to direct injection of corticotropin as the younger patients, an indication that the deficiency of adrenal stress response in the older patients may be at the level of the central nervous system or pituitary, while the deficiency is at the level of the adrenal cortex in the younger group.

Arch. Neurol. & Psychiat. 69:470-485, 1953.

Blocking Agents

Gastric Secretion Control

In treating diseases involving hyperactivity of the parasympathetic nervous system, Darstine may be more effective than Banthine. Darstine, a quaternary ammonium compound, increases gastric emptying time and decreases colon motility in dogs, report Dr. Jack D. McCarthy and associates of the University of Chicago. Oral administration of the drug reduces the acid gastric secretion in dogs with various innervated or denervated gastric pouches. Darstine, unlike Banthine, antagonizes the gastric secretory stimulating effects of both histamine and insulin-induced hypoglycemia. Perhaps less effective than Banthine in blocking preganglionic impulses, Darstine is approximately as effective in blocking postganglionic transmissions. Darstine is 5 methyl-4-phenyl-1-(1-piperidyl)-3-hexanol methobromide.

J. Pharmacol. & Exper. Therap. 108:246-250, 1953.

Angiology

Latex for Arteries

Thickening of arterial walls in the rabbit without intrinsic changes in vessel function is promoted by the application of latex. The adhering power of the material to the damp arterial wall may be enhanced by previous weak acidification of the vessel wall, adding tensile strength to the treated artery, report Drs. Barnes Woodhall and James Golden of Duke University, Durham, N. C. Of tissue irritants applied to the great saphenous artery in the rabbit, natural Hevea latex, with a total solid content of 65.5% and preserved in ammonia to a percentage of 0.7, was more effective in causing a uniform and thick fibrosis of adventitia and surrounding tissues than was marine varnish or Krylon. Structure of adjacent peripheral nerve tissues was not altered.

Arch. Surg. 66:587-592, 1953.

Hematology

Platelet Life Span

Blood platelets apparently live only three or four days, declare Dr. T. T. Odell, Jr., and associates of the Oak Ridge National Laboratory, Oak Ridge, Tenn. Radioactive thrombocytes, plasma, and erythrocytes of rats were examined after administration of formate labeled with carbon^{14}.

Federation Proc. 12:398-399, 1953.

CONSTIPATION*

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of the patient who is over **40**

In these cases, laxation *alone* isn't enough.

Because constipation in this age group is usually associated with indigestion and biliary stasis.

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*Rehfuss, M. E.: Indigestion, Philadelphia, W. B. Saunders Co., 1943, p. 322

CAROID AND BILE SALTS *tablets*

Specifically indicated in ***biliary dyspepsia and constipation***

Washington Letter

(Continued from page 64)

gone home, the committee took testimony from the American Medical Association on proposals for income tax deduction for pensions for the self-employed.

UMT to Be Reexamined

With the Korean Truce still fresh in mind, President Eisenhower reminded one and all that this did not end national concern for military preparedness. The long dormant National Security Training Commission has been asked to reexamine the question of Universal Military Training and make a new report, one that will be coupled with an Office of Defense Mobilization report on technical and scientific manpower resources in this country.

The President's requested answers to the following:

- How can the present inequities in securing men for the armed forces be eliminated?
- Can we operate a UMT program and continue to supply young men for immediate induction into the armed services?
- Will a UMT program allow us to build "a strong and equitable citizen reserve sufficiently advanced in training to permit regular forces to expand rapidly from peace to war strength?"

The Korean Truce does not mean that fewer physicians and dentists will be called into the armed services. However, the Army Surgeon

(Continued on page 234)

"...particularly beneficial in the treatment of hay fever."[1]

Because CHLOR-*TRIMETON*® maleate, chlorprophenpyridamine maleate, has the greatest potency milligram for milligram of any available antihistamine, and because "Chlor-Trimeton has a relatively low incidence of side reactions,"[2] it is a drug of choice for hay fever patients.

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1. Silbert, N. E.: New England J. Med. 242:931, 1950.
2. Eisenstadt, W. S.: Journal Lancet 70:26, 1950.

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"I set his Colles' fracture, not his collie's fracture."

PEDIATRICS BULLETIN

Prepared In The Interests Of The Profession By The Pediatrics Consultant Staff Of H. J. Heinz Company

Aspirin Poisoning in **CHILDREN**

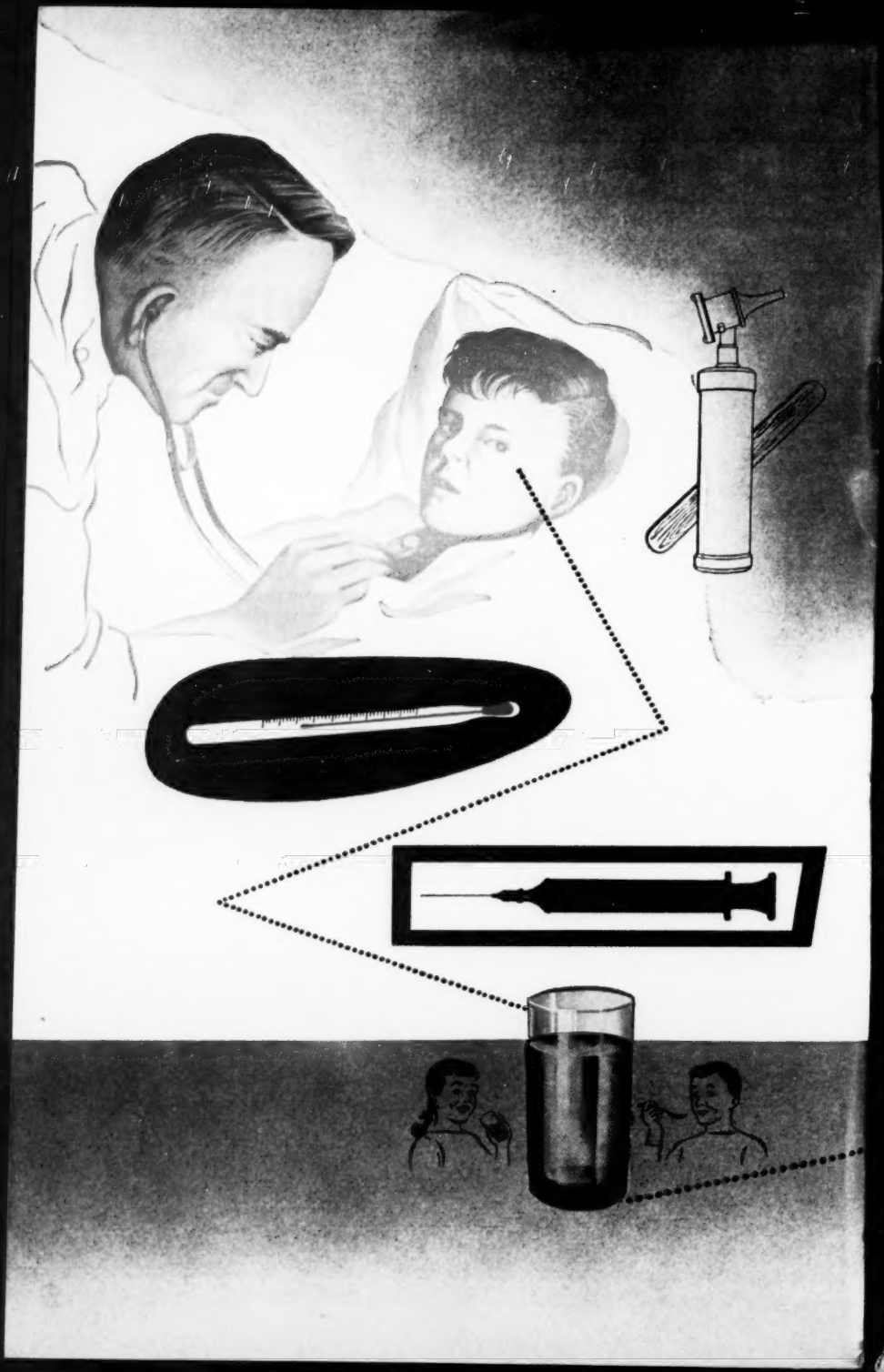
UNFORTUNATELY, as so many doctors have learned first hand, the ubiquitous aspirin bottle—so apparently innocuous—often proves a real danger in the home with small children. The risk is not just that a venturesome child may swallow half a bottle. On the contrary, most cases of aspirin poisoning are due to the parents' ignorance of the risk of aspirin therapy in children. Overcoming this lack of knowledge among parents, many doctors feel, is another task the profession must assume.

● **The risk** of administering aspirin to children is unpredictable, of course, because experience has taught us that the response of fever to aspirin is in part determined by a constitutional tendency, and actual poisoning is determined not only by dosage but by an idiosyncrasy. It has long been recognized, as you well know, that in typhoid fever in children, for example, even a small dose of aspirin may cause a drop of temperature to subnormal, shock-like levels—a drop of nine degrees in an hour having been encountered. And it has been found that in other febrile illnesses similar dramatic results may occur.

● **Mother** may well be accustomed to taking two or three 5-grain tablets for trivial complaints, even just to "pep" herself up, and so conclude quite wrongly that a single 5-grain tablet is a small dose even for her two-year-old.

● **Seemingly,** educating parents to the fact that aspirin, especially in initial doses, must be used with great caution in infants and children, and dosages should be related to weight, is one more responsibility the busy doctor must undertake.

NOTE: These bulletins are designed to help disseminate modern pediatrics knowledge to the general medical profession and will appear monthly in Modern Medicine.



While You Are Treating the Infection

—here is a potent, exceptionally tempting Vitamin B Complex Syrup with a therapeutic dosage of thiamine to build up the appetite—

—and it's in a delicious cola-flavored base which makes a "soda-pop" type of drink that young or old will take—whether they're hungry or not.

SUSTINEX

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Potent B Complex in a Cola-Flavored Syrup

—can be mixed with a carbonated beverage for a delicious "tall drink"—or taken direct from the spoon. Either way, it makes them want more. Sustinex contains no alcohol.

Samples on request.

Each 30 cc. (1 fl. oz.) contains:

Thiamine Hydrochloride	36 mg.
Riboflavin	3 mg.
Niacinamide	180 mg.
Panthenol	6 mg.
(equivalent to approx. 7 mg. calcium pantothenate)	
Pyridoxine Hydrochloride	6 mg.
Vitamin B_{12}	12 mcg.

Bottles of 8 fl. oz. and one pint.

McNEIL

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General says the medical needs of the Far Eastern Command will be reevaluated. Meanwhile, National Advisory Committee to Selective Service recommends that calls from among priority III physicans be limited to those under 30 years of age for the next twelve-month period. "If deferments are not granted in this group," the committee says, "there probably will be sufficient number available to fill the calls for this fiscal year."

As is almost always the case, appropriations bills for many government agencies are not acted upon until after the fiscal year begins on July 1. This year the Department of Health, Education and Welfare appropriation was held up even longer than usual because of the differences in House and Senate versions of the bill. While the conferees were able to come to a meeting of minds on most items in fairly short order, they met three times before agreeing on the funds to be appropriated for Hill-Burton hospital construction.

The House approved $50,000,000 for new construction, the Senate $75,000,000, and the President $60,000,000. Finally, after much discussion, the conferees agreed to $65,000,000. Generally, the Senate raised the sums allocated to health and medical activities, particularly to the National Institutes of Health, and, while the conferees did not always accept the Senate figure, all items are well above the amount that was originally passed by the House.

Institute funds finally approved by Congress were: cancer, $20,237,000; mental health, $12,095,000; heart, $15,168,000; arthritis

(Continued on page 238)

In Many Respects

THE SAFEST AMONG THE MORE POTENT HYPOTENSIVES

- **lowers blood pressure by centrally induced vasorelaxation**
- **hypotensive action independent of alterations in heart rate**
- **retains its efficacy during prolonged periods**
- **rarely promotes sensitivity or increased tolerance**
- **produces warning symptoms of overdosage before the critical level has been reached**
- **no paralysis of sympathetic activity**
- **no postural hypotension**
- **no compromise of renal function**
- **no reduction in cardiac output or cerebral blood flow**
- **no tachycardia or increase in cardiac work**

These are the desirable pharmacologic and clinical features of Veriloid which establish this alkaloidal extract of Veratrum viride as the safest of the potent hypotensives. Note that your patient need not be hospitalized, can maintain his normal business and social activities, and is not living in constant danger of hypotensive collapse due to sudden changes in posture. No death attributable to Veriloid has ever been reported, yet this drug has enjoyed extensive use during the past five years.

Average initial dose, 3 to 4 mg. three times daily after meals, at intervals of not less than four hours.

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WHAT YOU SHOULD KNOW

The New LYSOL *exerts remarkably rapid and prolonged bactericidal and fungicidal activity*

- Staphylococci are destroyed at body temperature in one minute by a 1:200 dilution; hemolytic streptococci in 30 seconds. Antibacterial and antifungal activity persists for a week or more on surfaces such as unglazed porcelain, linoleum, asphalt tile, painted wood, etc., following application of a 1:100 solution (as recommended for general disinfection).
- LYSOL's antibacterial spectrum embraces all common pathogens, including those which often resist the action of the mercurials or quaternary ammonium compounds (e.g., *M. tuberculosis, Trichophyton interdigitale*)
- LYSOL's germicidal activity is practically unimpaired in the presence of organic matter.

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LYSOL—for 50 years the world's most widely accepted disinfectant—now offers a new and improved formulation with important new advantages.

The New LYSOL *is safe*

- It is non-toxic, non-caustic, non-corrosive. (The "poison" warning is no longer required.)
- Toxicity studies indicate an acute toxicity (LD_{50}) of 10 cc/kg., equivalent to 23 fluidounces of the concentrated solution for an average adult man.
- Subacute (cumulative) toxicity, percutaneous toxicity, and dermal and mucosal irritant action are similarly negligible or absent.

The New LYSOL *is truly an "all-purpose" disinfectant*

- It is effective and economical for all general disinfecting purposes (in the treatment room, home, nursery, etc.);
- For disinfection of instruments, utensils, rubber goods, diapers;
- For surgical and obstetrical preparation; for treatment of wounds, abrasions, and certain dermatomycoses; for vaginal hygiene, and many other uses.

Would you like further information on the New LYSOL's *particular uses, or a trial supply? A note on your prescription blank or professional letterhead will be promptly acknowledged. Address the Professional Products Division, Lehn and Fink Products Corp., 445 Park Ave., New York 22.*

The new and improved LYSOL formula primarily involves a reduction in cresylic acid content and an increase in the amount of orthohydroxydiphenyl to retain a phenol coefficient of 5.

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and metabolic diseases, $7,000,000; dental health, $1,740,000; microbiology, $5,738,000; neurology and blindness, $4,500,000.

The entire budget for HEW, including activities of Public Health Service, National Institutes of Health, Children's Bureau, Food and Drug Administration, Social Security Administration, and the Office of Education, comes to $1,738,399,261.

The Public Health Service has set up a gamma globulin evaluation center to study efficacy of the blood derivative for poliomyelitis cases. Homes in which two or more cases occurred will be used for special study. Cases in the epidemic areas of this summer will be investigated. The Association of State and Territorial Health Officers, the American Physical Therapy Association, and the D. T. Watson School of Physiatrics of University of Pittsburgh School of Medicine are cooperating in the effort.

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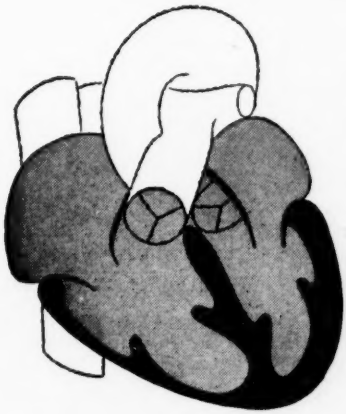

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*Strauss, V.; Simon, D. L.; Iglauer, A., and McGuire, J.: Clinical Studies of Intramuscular Injection of Digitoxin (Digitaline Nativelle) in a New Solvent, Am. Heart J. 44:787, 1952.

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Friedman, A. P., Modern Headache Therapy, St. Louis, C. V. Mosby Co., 1951, p. 114

* If necessary, an additional 1 tablet dose every half hour until the attack is aborted or 6 tablets have been taken.

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can help them both!

FOR GRANDPA you've probably prescribed "reduce!". If he isn't already the victim of cardiac difficulties, kidney disfunction or other expected "old age" diseases he soon may be. The Knox Gelatine "Eat and Reduce Diet" will help fill his need for increased protein intake . . . give him filling, palatable foods as well as tasty between-meal gelatine drinks.* It's the kind of a low calorie, high protein diet he can stick to because he "feels satisfied."

GRANDMA'S PROBLEM is probably getting her to eat enough of the proteins she needs for bone and tissue upkeep now that she's older. A finicky eater at best, she will find molded main dish meals, new salads and desserts made with Knox Unflavored Gelatine, appetizing enough to arouse new interest in food . . . and easy to fix, too. They're just filling enough without over-taxing her "small" stomach. And she can join Grandpa in a Knox Gelatine Drink* with meals, between meals, or at bedtime. This higher protein intake may even help remove her complaint[1] of "dry skin and itchiness."

ALL PROTEIN Knox Unflavored Gelatine contains 17 amino acids, with seven of the eight essential ones. Sugar tolerance,[2] vascular tone,[3] hemoglobin and red cell count,[4] and gastric disturbances[5] have all shown improvement with increased protein intake. Knox Unflavored Gelatine, which is pure protein, offers a useful method of supplementing the ordinary dietary protein.

***To prepare KNOX GELATINE DRINK as a protein supplement: Just empty one envelope of Knox Gelatine into ¾ glass of milk, fruit or vegetable juice, or water. Stir briskly and drink. Each envelope contains 7 grams of pure protein.**

1. Morgan, D. B., Geriatrics 8:75, 1953
2. Armstrong, D. B. et al., J.A.M.A. 147:1007, 1951
3. Lewis, T., Vascular Disorders of the Limbs, p. 50, Macmillan, 1936
4. Reich, C., and Mulinos, M. G., Bull. N.Y. Med. Coll. March, 1953
5. Barborka, C. J., Treatment by Diet, p. 301, J. B. Lippincott, Phila., 1948

SEND FOR SPECIAL KNOX GELATINE DIETS
Reducing, Low Salt, Diabetics, Peptic Ulcer, and Convalescent. "Eat and Reduce Plan" recipe booklets are available on request, too.

WRITE KNOX GELATINE COMPANY, JOHNSTOWN, N. Y. DEPT. X

To protect your patients, have them ask for KNOX specifically.

Available at grocery stores in 4-envelope family size and 32-envelope economy size packages.

KNOX GELATINE U.S.P.
ALL PROTEIN • NO SUGAR

Patients... I have met

• *The editors will pay $1 for each story published. No contributions will be returned. Send your experiences to the Patients I Have Met Editor, MODERN MEDICINE, 84 South Tenth St., Minneapolis 3, Minn.*

The Doctor Played On

My young son proudly said, "My dad is a specialist."

"What kind?" asked his little playmate.

"Some kind of doctor," was the reply. "I think he's a women's organist."—B.P.S.

And Always Tell the Truth

As an obstetrician's nurse I heard a client in the waiting room complain, "Sonny, don't put your feet all over my dress!"

"Gee, that's right, Mom," replied the youngster. "I can't get that dress dirty 'cause it's the only one that fits ya!"—G.W.

"Hear a discouraging word, Doc?"

For Conservative Management of

Hypertension

ORGAPHEN®

TABLETS • LIQUID

FIRST:

Relieve the tension... Raise the spirit

THEN

Lower the blood pressure... ease the symptoms

Less phenobarbital for the "patient on edge"

Relief of the subjective symptoms accompanying high blood pressure may completely rehabilitate a hypertensive patient. Whereas, *mere lowering of blood pressure without relief of symptoms,* serves no such purpose.

The patient receiving ORGAPHEN WAMPOLE experiences relief of the disturbing subjective symptoms. A fall in blood pressure usually follows this subjective improvement.

ORGAPHEN WAMPOLE, a unique elixir of *organically bound iodine* and phenobarbital, has become a useful tool in the management of hypertension.

Each 4-cc. (teaspoonful) or tablet contains:

ORGANIDIN® equivalent to 10 minims of ORGANIDIN Solution containing 1/4 grain of iodine organically combined.

PHENOBARBITAL . . . . . 1/5 grain

The low effective dose of the small quantity of phenobarbital in ORGAPHEN is *potentiated* by the *synergistic* action of ORGANIDIN. The *smaller* dose of phenobarbital tends to preclude neuroses frequently resulting from the larger doses more commonly employed.

Supplied: ORGAPHEN LIQUID in 16-oz. bottles.
ORGAPHEN TABLETS in bottles of 100.

Samples and literature on request.

WAMPOLE LABORATORIES

HENRY K. WAMPOLE & CO., INCORPORATED • PHILADELPHIA 23, PA.

Am. J. Med. *4*:875, 1948. Slaughter, Donald; Grover, Wm. C., and Hawkins, Richard. Report to American Therapeutic Society, Boston, 1950.

Society Matron

or

SKID ROW BUM

Both ARE IN DANGER FROM THE USE OF

BARBITURATES

AND

ALCOHOL*

THE 3 TETROBARBS

NEW and SAFER barbiturate compounds (1) MINIMIZE the possibility of barbiturate poisoning, (2) eliminate states of irresponsible amnesia and morning "hangover," and (3) provide the same hypnotic effect as the plain barbiturate alone.

* Donald A. Dukelow, M.D., in Today's Health, March 1953, holds that business and society men and women often accidentally are endangered by this combination. After an evening of social drinking and while still under the influence of alcohol, they use a "sleeping pill" to produce sleep. The combined effect of alcohol and barbiturates makes them forget [illegible] the fact that they have taken one [illegible] they are apt to take more [illegible] "follow the skid row bum to [illegible]."

Backfire

I was explaining the theory of overcompensation to my psychiatry class: "People with weak eyesight strive to become great painters, puny children tend to become physical culture enthusiasts . . ."

"And," piped up a voice from the rear, "people mentally retarded become psychiatrists."—J.M.B.

Out of Line

I was hit by a car at an intersection and as the traffic cop bent over me I moaned, "Call a doctor."

"But you are a doctor and a specialist," said the policeman as he recognized me.

"I know," I replied, "but I can't afford my services. My fees are too high."—B.P.S.

Anything Can Happen

My irritable patient demanded constant attention from his wife while he was recovering from a minor illness. When his wife announced that she was going to leave his bedside a short while to have a new suit fitted, my patient groaned in self-pity, "How can you think of leaving me? Anything might happen while you're out."

"It's all right, John," she replied quietly. "It's a black suit."—F.R.

"Well, there goes her diet!"

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WMA *is you*

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new! Daprisal*

a potent new non-narcotic analgesic preparation containing the components of Dexamyl†

"the first non-narcotic ever tested in this laboratory which caused a statistically significant elevation of the threshold to experimentally induced pain."[1]

'Daprisal' has 2 beneficial effects on the patient in pain:

1. It relieves the physical aspects of pain through the potentiation of its acetylsalicylic acid and phenacetin components by amobarbital.

2. It relieves the psychic aspects of pain because it contains the components of 'Dexamyl'—Dexedrine‡ and amobarbital.

FORMULA: Each tablet contains 'Dexedrine' Sulfate (dextro-amphetamine sulfate, S.K.F.), 5 mg.; amobarbital (Lilly), ½ gr.; acetylsalicylic acid, 2½ gr.; phenacetin, 2½ gr. Available at your pharmacy—on prescription only—in bottles of 50 tablets.

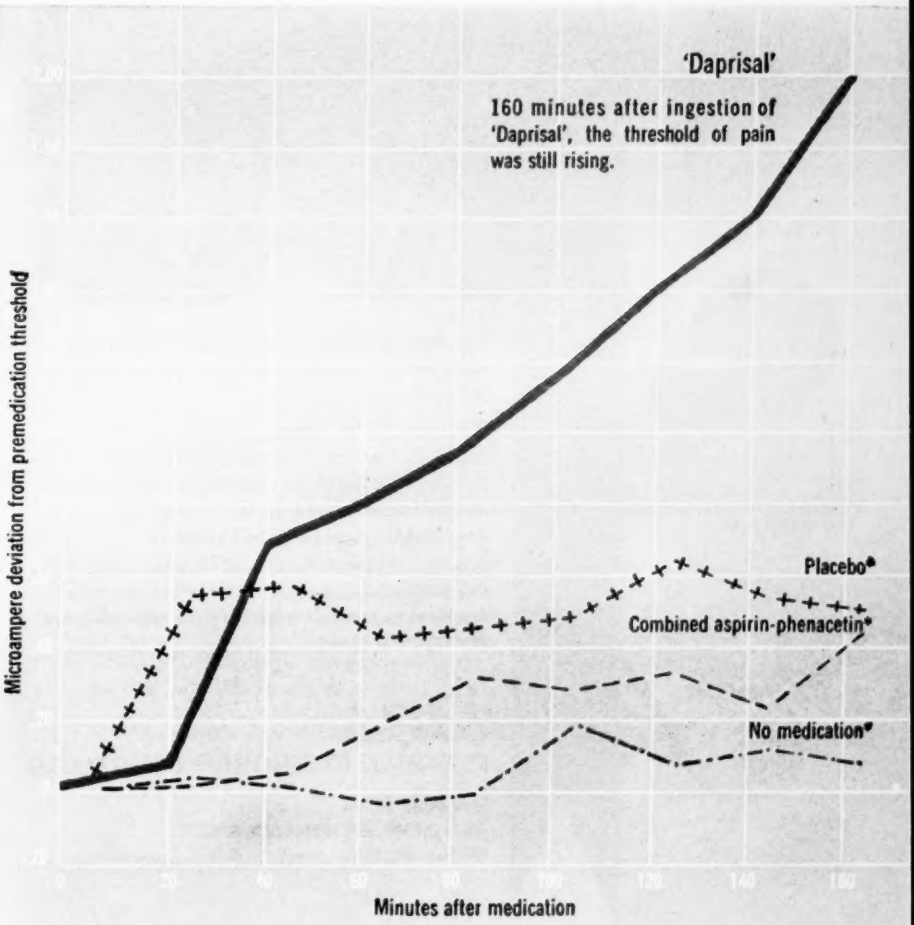
Smith, Kline & French Laboratories, Philadelphia

1. Harris, S.C., and Worley, R.C.: presented before the Illinois Section of the Soc. Exper. Biol. & Med., May 26, 1953.

*Trademark
†T.M. Reg. U.S. Pat. Off.
‡T.M. Reg. U.S. Pat. Off. for dextro-amphetamine sulfate, S.K.F

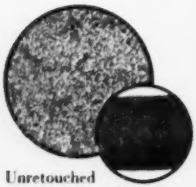
A comparison of the thresholds to experimentally induced pain following the administration of 'Daprisal', aspirin-phenacetin, placebo and with no medication.

(The method used was that of electrical stimulation of tooth pulp. The amount of electrical current necessary to elicit a sensation of pain in a vital tooth containing a metal filling was measured both before and at intervals after medication.)

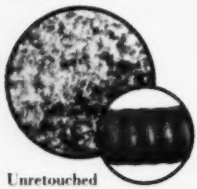


*"... there was no significant difference in the deviations caused by the other treatments [placebo, aspirin-phenacetin, and no medication] . . ."

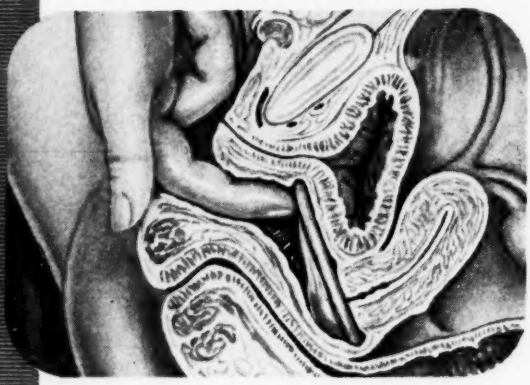
Outstanding IN USE... IN QUALITY... IN DEPENDABILITY



Unretouched photomicrograph of the dome (enlarged 10 diameters) and the rim (inset) of a RAMSES Flexible Cushioned Diaphragm.



Unretouched photomicrograph of the dome (enlarged 10 diameters) and the rim (inset) of a conventional-type diaphragm.



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Well tolerated... Usually no congestive rebound... Undiminished effectiveness on repeated use... No appreciable interference with ciliary action.

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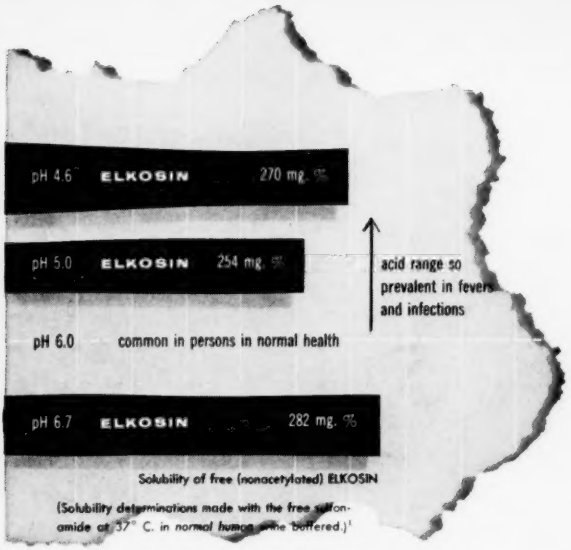

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1. Ziegler, J. B.; Bagdon, R. E., and Shabica, A. C.: To be published.

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